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CARE OF MOTHERLESS BABIES IN NIGERIA

THESIS

submitted for the Degree of

DOCTOR OF MEDICINE

UNIVERSITY OF GLASGOW

by

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VOLUME I

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SUMMARY

In the developed countries, numerous investigations over the past forty years have demonstrated that young children who are deprived of the love, attention, and continuous care of a mother or mother substitute figure can suffer adverse effects which may manifest themselves in retarded physical, mental, and social development. In Nigeria, however, little is known about the extent and problems of deprived children. The present study, a pioneer one in that country, attempts to examine the problems involved in the care of motherless babies in the Western State of Nigeria, to evaluate critically in terms of their physical, mental and social development, the efficacy of existing methods of care and, finally, to formulate recommendations for their improvement and development.

The samples in the study were drawn from urban and rural communities and comprised 227 motherless babies - 110 in institutions, 30 in foster homes and 87 living with their families; in addition, 140 children in two control groups were examined. All were under five years old and from the same socio-economic background.

The study comprised three parts, retrospective, transverse and prospective, and was preceded by a detailed

survey of the institutions and foster homes with special reference to physical environment, standards of care, and quality of staff. In the retrospective study, examination of any available medical records of motherless babies in the various groups was carried out with special reference to morbidity experience. In the prospective study, the motherless babies were followed up for twelve to eighteen months and weight gain or loss and morbidity experience recorded. In the transverse study, general physical examination and certain laboratory investigations were performed on each child using standard procedures. For the psychological assessment, those under two years were given ^{the} Griffiths Baby Test, and for the two to five year olds the revised Stanford-Binet Achievement tests were administered. General information about the children and their families was collected by the use of self-devised questionnaires and by direct interviews with individuals.

Community opinion surveys were also conducted in two areas, one representing an urban, the other a rural community. Married persons were interviewed in each locality and their opinion sought about the publicity of, and their own attitude to, the different methods of care.

The findings indicate that motherless babies in institutions, although in a comparatively healthier environment, had the highest mortality and morbidity. It is also shown that motherless babies living with their families achieved better mental, social, and physical development than those in institutions or foster homes. However, in one institution where there were higher standards of care and supervision, the development of the motherless babies there compared favourably with those living with their families.

The community opinion surveys revealed that the different methods of care were not publicised sufficiently and that the majority of those interviewed were unwilling to receive abandoned children into their own homes.

Finally, the problems involved in the care of motherless babies were analysed, and the reasons for them discussed. These included the high cost of institutional care, the shortage of suitably trained staff and the scarcity of foster homes and of suitable foster parents. Inadequacies in all three methods of care can be attributed to several causes. General and specific recommendations are suggested to improve the care of motherless babies and

these will involve action by central and local Government, the voluntary organisations and agencies concerned and, not least, an increased community responsibility.

OUTLINE OF THESISVOLUME I

Contents

Introduction

PART ONE - THE BACKGROUND TO THE STUDY

CHAPTER I Historical Background

CHAPTER II The Western State of Nigeria

PART TWO - THE PRESENT STUDY

CHAPTER III Outline of the Study

CHAPTER IV Retrospective and Prospective Studies

CHAPTER V Transverse Study - Physical Development

CHAPTER VI Transverse Study - Psychological Assessment

CHAPTER VII Transverse Study - Socio-Economic Background

CHAPTER VIII Community Opinion Survey

PART THREE - EVALUATION

CHAPTER IX Discussion

CHAPTER X Recommendations

Conclusion

Acknowledgements

References

VOLUME II

Appendices A to G

CONTENTS

<u>VOLUME I</u>		<u>Page</u>
	<u>INTRODUCTION</u>	1
	<u>PART ONE - THE BACKGROUND TO THE STUDY</u>	
CHAPTER I	HISTORICAL BACKGROUND	4
	(i) Review of the literature on maternal deprivation	4
	(ii) History of the care of motherless babies in the Western State of Nigeria	22
	(iii) Infant and maternal mortality in Nigeria and other countries	29
CHAPTER II	THE WESTERN STATE OF NIGERIA	40
	(i) Demographic and geographical description of the Western State of Nigeria	40
	(ii) Child health and social services available to the under-fives in the Western State	44
	(iii) Agencies for the care of motherless babies in the Western State	53
	<u>PART TWO - THE PRESENT STUDY</u>	
CHAPTER III	OUTLINE OF THE STUDY	66
CHAPTER IV	RETROSPECTIVE AND PROSPECTIVE STUDIES	72
	(i) Motherless babies in institutions and foster homes	72
	(ii) Morbidity and mortality in motherless babies	82
CHAPTER V	TRANSVERSE STUDY - PHYSICAL DEVELOPMENT	102
	(i) Material and methods	102
	(ii) Results	108
	(iii) Discussion	115

	<u>Page</u>
CHAPTER VI TRANSVERSE STUDY - PSYCHOLOGICAL ASSESSMENT	131
(i) Material and methods	131
(ii) Results	
(iii) Discussion	141
CHAPTER VII TRANSVERSE STUDY - SOCIO-ECONOMIC BACKGROUND	154
Motherless babies and their families	154
CHAPTER VIII COMMUNITY OPINION SURVEYS	162
Motherless babies and the community	162
 <u>PART THREE - EVALUATION</u> 	
CHAPTER IX DISCUSSION	179
CHAPTER X RECOMMENDATIONS	187
CONCLUSIONS	203

<u>ACKNOWLEDGEMENTS</u>	204
<u>REFERENCES</u>	206

INTRODUCTION

Much has been written in paediatric literature concerning the high and infant and childhood mortality in Nigeria (Gardner and Gardner, 1959; Morley, 1963; Gilles, 1964) and other developing countries in Africa (Platt, 1954; Nhonoli, 1954). The high mortality has been attributed to malnutrition and various forms of infection both of which occur against a background of poverty and ignorance, (Onabamiro, 1949; Jelliffe, 1952).

In recent years, the introduction of maternal and child welfare services has greatly improved the health and the survival rates of these children (Morley, 1963; Wennen, 1968). Children at special risk are being identified and appropriate services provided to meet their particular problems.

A well recognised high risk group are the motherless babies who face not only physical but social and mental problems which cannot be solved by the routine child-welfare services normally available at our health centres. Although attempts are being made to meet these problems, the approaches have been mainly empirical as there is little

information about the nature and extent of the task and little if any critical evaluation of the various systems of care developed in recent years. Yet, from personal clinical experience and from medical records, it is clear that the motherless babies fare badly and have a very high mortality.

The studies contained in this thesis were therefore designed with the following aims:

- (a) To define the problems involved in the care of motherless babies in the Western State of Nigeria.
- (b) To evaluate the present methods for caring for these children.
- (c) To use the findings of (a) and (b) as a basis for planning a programme that would be feasible and acceptable in terms of the social, economic and cultural factors of Nigeria.

The thesis is in three parts. Part One deals with the background of the study and commences with a demographic and geographical description of the area, the history of the care of motherless babies in the Western State of Nigeria and a review of the literature on 'maternal deprivation'. Infant and maternal mortality in Nigeria and other countries are examined, medical and social

services available to the pre-school child in the western State of Nigeria are outlined and finally the various agencies which care for motherless babies in the Western State are described.

Part Two describes the studies which form the basis of the thesis. After descriptions of the general plan of investigation and of the institutions and foster homes, detailed accounts are given of the retrospective and prospective studies with special reference to the pattern of morbidity and mortality in motherless babies. In the transverse study, the different methods of care of these children are evaluated with regard to their physical, mental and social development and in addition, their socio-economic background is assessed. Finally, community opinion surveys on the publicity of and attitude to the different methods of care of motherless babies are described. In Part Three, the author discusses the findings of the various studies and submits her recommendations and conclusions.

PART ONE - THE BACKGROUND TO THE STUDY

CHAPTER I

HISTORICAL BACKGROUND

- (i) Review of the literature on maternal deprivation.
- (ii) History of the care of motherless babies in the Western State of Nigeria.
- (iii) Infant and maternal mortality in Nigeria and other countries.

CHAPTER IHISTORICAL BACKGROUND(1) REVIEW OF THE LITERATURE ON MATERNAL DEPRIVATION

The concept of "maternal deprivation" like most medical concepts has evolved over a period of years. The term has been applied in the literature to several different sets of conditions which singly or in combination sometimes appear to have similar consequences. It is therefore important to begin by clarifying its usage.

Four diverse conditions have been included under the broad term 'maternal deprivation'. These are:

1. Institutionalization: where an infant or young child lives in an institution or hospital where he has no major substitute mother and where he receives insufficient maternal care and as a consequence has insufficient opportunity for interaction with a mother figure.
2. Mother-child separation: where a young child undergoes a series of separations from his mother or a mother substitute figure(s) to each of whom he has formed attachments.

3. Multiple mothering: in which there is no one person continuously performing the major mothering functions.
4. Distortion in the quality of care: e.g. rejection or over protection - which occurs when an infant or young child in his own home is given grossly insufficient maternal care by his own mother or permanent substitute mother and has no adequate mothering from other people to mitigate the insufficiency of interaction.

None of these conditions however ever exists separately. Institutionalization sometimes may follow separation from mother or mother substitute and multiple mothering will occur in an institution.

From as early as the thirteenth century reference has been made to the effect of maternal deprivation. In that century, Frederick II, German King of Sicily and Emperor of the Holy Roman Empire, directed an experiment which yielded unfavourable results and which described in Salimbene is referred to by Stone (1954).

....."His second folly was that he wanted to find out what kind of speech and what manner of speech children would have when they grew up if they spoke to no one beforehand. So he bade foster mothers and nurses to suckle the children, to bathe and wash them,

but in no way to prattle with them or to speak to them for he wanted to find out whether they would speak the Hebrew language which was the oldest, or the Greek or Latin or Arabic, or perhaps the language of their parents of whom they had been born. But he laboured in vain because the children all died. For they could not live without the petting and joyful faces and loving words of their foster mothers".

Salimbene - 13th Century (Stone, 1954)

In 1848, Charles Dickens wrote in *Dombey and Son*

"All this vigilance and care could not make little Paul a thriving boy. Naturally delicate, perhaps, he pined and wasted after the dismissal of his nurse, and for a long time seemed but to wait his opportunity of gliding through their hands and seeking his lost mother. This dangerous ground in his steeplechase towards manhood passed, he still found it very rough riding and was grievously beset by all the obstacles in his course."

Charles Dickens (1848)

These extracts from ancient times have gained supporters in modern years. Since the beginning of this century, a tremendous awareness of the possible adverse effects of deprivation on the physical, intellectual and emotional development has existed. Chapin in 1908 described the 'atrophic infants' who had been institutionalised for long periods and in 1915 also reported the high mortality rates in ten infant asylums in the United States where the figures ranged from 31.7% to 75%. In that same year, as quoted by Chapin, a survey made in Baltimore by

Knox revealed that despite adequate physical care 90% of infants in institutions died within one year of admission. Holsclaw and Rude in 1915 reported mortality in the foundling asylums of San Francisco as 59%; after the children had been boarded out to foster mothers to ensure individual care, the mortality in the same group of children declined to 12%. All these reports emphasized the physical needs of the children and the physical hygiene of the institutions. However, there was no research documenting the ill effects of loneliness. As early as 1913, Talbot reported the case of an amusing fat old lady, Anna, in a hospital in Dusseldorf, Germany who was seen around the ward with a baby on her hip. Apparently, whenever a child failed to thrive in spite of medical treatment it was given to old Anna who always successfully mothered the child. Brennemann (1932) observed that "nurses' pet" get along better than the rest and instituted the rule that infants should be 'picked up, carried around, amused and mothered several times a day'.

It was not until the early 1930's that reports appeared in psychiatric and psychological literature of the ill effects of loneliness. Ripin (1933) compared the development of infants in an institution with that of the controls in homes of low economic status and found that

after the age of six months, there was a steadily increasing difference in favour of the group reared in homes. An independent study by Levy (1937) confirmed this finding.

Goldfarb (1943) found that at the age of ten to fourteen years (seven to eleven years after removal from institutional care) there was a statistically significant Intelligence Quotient (I.Q.) difference of 23 points between two groups of children who were similar in every respect except for one major factor - the first group had been reared in an institution for the first three years of life and were then placed in comparable foster homes.

Spitz and Wolf (1945) studied the adverse effects which occur during the first year if the child is kept throughout in an institutional environment. Four groups of children were studied, three groups consisting of 103 babies who lived with their mothers and the fourth consisting of 61 babies brought up in the Foundling Home, a hygienic institution. During the year, there was little change in the Developmental Quotient (D.Q.) of 103 babies who lived with their mothers. The group of 61 institution children showed a marked drop of D.Q., between the ages of four and twelve months; initially their mean D.Q. was 124

and second in magnitude of the four groups. By twelve months, it had dropped to 72 and by the second year to 45. Results showed that most of the drop in D.Q. had taken place during the first six months of life.

Spitz and Wolf (1946) reported that in the course of two years, 34 of the 91 Foundling Home infants observed died in spite of good physical hygiene and care, and of 21 remaining in this institution, all had extreme retardation of growth and development. Their heights and weights were all below the standard for two year olds. Only 5 of the infants between two years to four years walked and only one had a vocabulary of as much as twelve words. In the infants remaining in the Foundling Home till the second half of the first year, Spitz (1946) described a picture of depression, weeping, screaming when approached and lack of interest in the environment. If however the infants were returned to their mothers within this period, the symptoms disappeared. He believed that during the second half of the first year, the child was most susceptible to damage. Similar emotional disturbances which Ainsworth et al (1954) termed

"separation syndrome" had been described earlier by Burlingham and Freud (1944) in children separated from their mothers in the first few years of life and cared for in war-time nurseries in England.

Bowlby (1944) divided the cases he had seen at a child-guidance clinic into those who had been reported as stealing and those who had not. He then compared a group of 44 thieves matched for age and sex with a control group who although they had psychiatric problems did not steal. Several differences characterised the two groups. Among the thieves were 14 whom Bowlby described as affectionless characters while there were none in the control group. 17 of the thieves had been separated longer than six months from their mothers or mother substitutes during their first five years of life. Such personality distortion and mental retardation in older children were later reported by Bender, 1945; Goldfarb, 1949; Lewis, 1954; Feinberg, 1954 and Castle, 1954. Ferguson (1966), studying the performance of 205 young people born in war time and placed in the care of Glasgow Corporation Children's Department or who had just left to live with families, found their scholastic performance and intelligence poorer than that of a group of working class Glasgow boys not in care. The incidence of unemployment

and conviction were higher in those in care. Children admitted to care before the age of five had much lower IQ's than those admitted after five, and those admitted as infants had the lowest mean IQ. Children living with relatives performed best in intelligence tests, foster children next and children in residential homes poorest.

Institutionalization or prolonged separation from mothers does not necessarily lead to any specific effect upon mental development. This contradictory evidence was provided by Du Pan and Roth who in 1955 studied 14 one year old babies, 12 of whom had lived since birth in a Swiss residential nursery which was well staffed with senior nurses and student nurses learning child psychology and care. The babies received adequate individual attention, were provided with plenty of toys and allowed unrestricted visiting. Physical development was normal, mental retardation slight and the babies were sociable and friendly. A baby from a differently run old fashioned nursery who showed symptoms of institutionalization was brought to the nursery at seven months and seven months later, his DQ had increased from 55 to 80.

Garvin and Sacks (1963) studied 132 children of ages up to seven months who were in short-term residential care.

The institution was well staffed and provided opportunities for group play and also group identification. The children made a considerable gain in IQ. The initial mean IQ on admission was 89 points and rose in eight months to 97. The increase seemed related to duration of stay in institution and approximately one year was the optimal interval after which no further appreciable improvement was made. This study as in those of Rheingold, 1956; 1959; Klackenburg, 1956; Schaffer 1965; Dennis and Sayegh, 1965 and Casler 1965 shows that under favourable conditions, the development of infants in residential nurseries need not be retarded.

Bowlby et al (1956), in a study of older children, investigated the long term effect of maternal deprivation in a group who were tuberculous patients in a sanatorium and had therefore been separated from their mothers for periods of several months or even years before their fourth birthday. In comparison with a control group of healthy children, it was found that the sanatorium children were only slightly less well adjusted than the controls; only a few appeared to be delinquent and at least half were able to form reasonable social relationships.

Rabin's account (1958) of the Kibbutz babies provides evidence that any deviation from an exclusive mother-child

pair relationship does not necessarily lead to deprivation. The Kibbutz (collective settlement) nurseries are well staffed and the nurses are orientated to the psychological needs of the children. The latter are generally nursed by their mothers during infancy after which they only spend about two hours daily with their parents and the rest of the time with their nurses (metapelets) who perform the major socializing functions. Thus the children identify themselves with a family and with a stable peer group. Rabin comparing the Kibbutz reared children and a group of control babies between the ages of nine and seventeen months found the Kibbutz children to be retarded on personal social items of the Griffiths scale. However, comparison of the Kibbutz reared with the control children between the ages of nine and eleven years showed the former to be superior on intelligence, social maturity and personality items.

On the question of reversibility of the effects of deprivation, some authors have reported moderately encouraging results, whilst others have stressed the permanent nature of its effects. Goldfarb's studies provide the major evidence that damage done by very severe early deprivation is irreversible even by subsequent relief from deprivation. He found that among children who

experienced maternal deprivation in early infancy and spent the first three years of life under conditions of severe institutional deprivation, the emotional damage and the intellectual impairment were not reversed soon after deprivation was relieved (Goldfarb 1945, Spitz, 1949) or even later in adolescence (Goldfarb, 1943, 1947).

In 1947, Goldfarb compared 15 well adjusted with 15 severely maladjusted children matched in terms of age and sex and with mean age of fourteen years five months. All had been in the institution at some time during the first three years of life and were later placed in foster homes. The severely maladjusted children entered the institution at a mean age of six months and had spent an average of thirty-four months before foster placement; the well adjusted group entered the institution at a mean age of eleven months and had spent an average of twenty-five months before placement with foster parents. The experiences of both groups with foster parents and with their own parents were similar. The child's adjustment during the first six months following transfer from institution to foster home was evaluated. Out of the 15 who were rated well adjusted in adolescence, 9 were reported well adjusted in their earliest days in foster homes. Of the 15 who were rated poorly adjusted in

adolescence, 13 had been poorly adjusted during the first six months in foster home placement. Goldfarb therefore concluded that the privation experience of infants in institution may leave grave permanent effect on personality, the severity of which is dependent on the age at which deprivation occurs and on its duration.

The findings of Beres and Obers (1950) were moderately encouraging. They studied 38 adolescents and young adults from similar family backgrounds whose periods of institutionalization were not significantly different. Of the 38 a diagnosis was made of character disorder in 21, psychosis in 4, mental retardation in 4, psychoneurosis in 2 and satisfactory adjustment in 7. Five out of the latter seven cases did not adjust satisfactorily until early adolescence and before this they showed varying degrees of unsatisfactory adjustment and had to be placed with different foster parents. The authors concluded that impairment to intellectual functions following maternal deprivation in infancy and early childhood is not an irreversible process and given time, good adjustment can be achieved. Similar encouraging results were reported by Fischer (1952), Pringle and Sutcliffe (1960) and Hellman (1962).

The classic symptoms of 'hospitalism' characterising

the deprived child can develop not only when the mother is absent but also in her presence and can be prevented in her absence if an adequate substitute takes her place.

Woodhead (1946) in a study of 26 cases reported psychological problems of parents which may aggravate the severity of illness in the children. Rosenthal (1952) in a study of 25 children with eczema found more mothers rejecting their children than in those of non-eczematous children of the same age. The mothers of eczematous children very rarely cuddled or caressed them. Engel et al (1956), in describing the case of a female infant with a congenital atresia of the oesophagus, found there was rejection on the part of the mother. Fearing dislodgement of the gastric tube through which the infant was fed she tended not to cuddle the child who became apathetic and marasmic and at fifteen months showed the physical development of a five to eight month old child. The infant was not responsive to her environment until she formed a close relationship to a nurse and to one of the doctors who in order to study gastric secretion had to spend considerable time with her. Within a short time, she started to smile and became more active. During nine months in hospital her weight rose from 4500 to 7500 gms despite a much reduced caloric intake.

Elmer (1960) described five infants hospitalised because of 'failure to thrive' and who presented the typical features of 'hospitalism' although they had been with their mothers. Each was found to have a history of unsatisfactory home background but corrective psychotherapy of the mothers removed the disturbances.

Coleman and Provence (1957) showed that developmental retardation due to deprivation can occur in a family setting where the families are of relatively high socio-economic status. Such developmental retardation was related to disturbed rejecting behaviour on the part of the mothers who despite their physical presence were unable to provide the sort of emotional environment necessary for the child's normal mental development. One case of a female child of graduate parents was cited. The mother was ambitious and wanted to succeed in her career and had always wished for a male child. Thus, she had no urge to feed, cuddle or caress her. At six months, the child's development became progressively retarded and she was underweight and marasmic. Paediatric counselling was offered to the mother who cooperated fully and at 13 months the child was much improved, alert and responsive.

Despite the predominant interest in emotional and

intellectual development of deprived infants, other studies have laid equal emphasis on the physical effects of maternal deprivation. Spitz (1946) and Bakwin (1949) mentioned listlessness, lack of response to stimuli, lack of appetite, failure to gain weight despite adequate diet, insomnia and frequent attacks of fever in children reared in institutions and stated these features usually disappeared when the child was returned to his home environment.

Fried and Mayer (1948) followed carefully the growth patterns in the Jewish Children's Home in Cleveland, Ohio, an institution for dependent and neglected children. Many of the children were admitted into the home because divorce, parental rejection or emotional disturbance in their own homes had caused resultant personality damage. It was observed that good physical care and social activities in the Children's Home did not induce return or normal growth until the emotional disorders had been corrected.

Widdowson (1951) had described a study of weight gain among children in two German Orphanages. Nutritional factors in both groups of children were carefully controlled. The children who received dietary supplements gained less

weight than the group remaining on basic rations. This finding was baffling until it was realised that the supervisor of the first orphanage was harsh and unsympathetic and subjected the children to a great deal of unnecessary harassment and emotional upset.

Feeding problems in children abruptly weaned or removed from their mothers often results in undernutrition and retarded development in Africa and is characterised by the syndrome of Kwashiorkor - a protein deficiency disease commonly seen in African children (Geber and Dean, 1956).

In 1956, Bransby and his co-workers undertook longitudinal growth studies of 3,027 English school children. The factors considered in relation to growth status were social and emotional stability within the home, economic status and size of the family. Children in good economic status were 0.6 to 1.4 ins. taller and 0.5 to 5.6 lbs heavier than those in poor economic status and children from smaller families 0.6 to 1.8 ins. taller and 1.3 to 6.6 lbs heavier than those belonging to large families. The most striking differences were found however in children grouped according to social and emotional stability within the home. Children from

good home conditions were 1.7 to 2.6 ins. taller and 2.0 to 9.3 lbs heavier than those with bad home conditions.

In summary, prolonged deprivation beginning early in life and lasting for as long as three years usually has serious adverse effects on physical, mental and social development. The effects may be reversed if relief from privation is instituted early enough. Deprivation is not an inevitable result of mother-child separation. It may occur in the presence of the mother and may be relieved in her absence.

Bowlby (1952) in his very controversial monograph - *Maternal Care and Mental Health* cited the experiences of many authors who had written on 'Maternal Deprivation'. Their studies reviewed in his monograph and those of subsequent investigations have dealt with problems of maternal deprivation in most parts of the world except in Africa. Yet the latter provides an area in which a study of maternal deprivation could make an important contribution to increasing the knowledge of the effects of mother-child separation in developing countries. It is known for instance that the extended family serves as a social institution in most African countries and it is generally held that the maternal functions are shared by female members within such families. People in Africa, more

than in any other part of the world still live in rural areas where the standard of living is low (Davey and Lightbody, 1961), medical and social services are poor and cultural and traditional beliefs and practices still prevail. In many areas, however, this pattern is changing as a result of increasing urbanization and industrialization. The effects of such different environmental settings on children have rarely been considered in the literature on maternal deprivation. The present study therefore includes motherless babies reared in the extended family structure and in the different environments both urban and rural.

(11) HISTORY OF THE CARE OF MOTHERLESS BABIES IN THE
WESTERN STATE OF NIGERIA

Before the advent of the missionaries into the Western State of Nigeria, motherless babies had been cared for within the extended family unit. The type of care depended on the age at which maternal deprivation occurred. (Ayorinde, 1970)[‡]

A child whose mother died at child birth, 'Omp Orukan'[‡] was automatically given to the paternal grandmother in the first instance and failing this to the maternal grandmother or any other female relative. This practice still persists and it then became the responsibility of the grandmother to look for a nursing-mother within the family to breast feed the child. This invariably proved difficult since it was and still is the belief that a nursing mother risked the life of her own baby if she breast fed the child of a dead person. The process of stimulating lactation in a non-nursing mother was complex as it involved grinding different types of native herbs together and rubbing the breasts with the final product for a day or two. The child who

‡ Literally, 'Omp Orukan' is a child that deserves sympathy.

until then had been fed on boiled water and a herbal preparation (Agbo) was then put to the adult's breast which invariably produced little or no milk.

Any child surviving this critical period in life had more than the normal share of affection. Invariably she was spoilt by other members of the family because it was the belief that a dead woman's child must not be punished for any of his shortcomings as the ghost of the dead mother might haunt one at night.

In addition to this group of motherless babies who had some form of care but a slim chance of surviving, there was another group who could not claim to be part of any family unit. These comprised children abandoned in forests and streams during the period when our large cities were torn with tribal wars. Such was the situation in the mid nineteenth century when the missionaries came and found children in great need, neglected, deserted and left to perish.

In 1851, Rev. David Hinderer, a German by birth, was sent by the Church Mission Society (C.M.S.) to preach the gospel to the Yoruba pagans and for two years he worked tirelessly among the people. In 1853, whilst on leave in England, he married an English girl, Miss Anna Martin, and

both came back to Ibadan to continue their good work. Anna Hinderer was particularly impressed with the friendliness of the black children and once she had settled, she started boarding these children in her own home primarily to instruct them in the gospel. Some were given to her by their relatives who wished the children brought up as Christians, others had been neglected or deserted and a few were found starving and in need of care. Some others were rescued from death penalties as it was the custom to bury a number of small children with the king on his death. (Thorpe, 1956).

The Hinderers like many other pioneer missionaries were persecuted by the pagan priests who strongly opposed their work and some Yoruba people who became converted were treated as outcasts even by their relatives. (Ibadan, 1856). Despite these obstacles, the Hinderers were greatly loved especially by "their children" who referred to Anna Hinderer as 'Iya' (Mother). During the latter's seventeen years stay in Ibadan, she rescued many children (Home, 1873) and is remembered by the Ibadan people as the 'Iyalode Funfun' (White queen of Ibadan) a title which was conferred on her for her good work and her devotion to the children.

The C.M.S. was not the only mission involved in this humanitarian task. The Baptist Mission also played an important role. In 1920, Miss Elma Kersey, a Baptist Missionary and a nurse by profession, came to Ogbomoso (Ajao, 1970) and became the first nurse to work in the small Baptist Mission hospital there. In 1922, she rescued a newly born baby girl who was just about to be buried with her mother and cared for the infant in a wooden box which was always left by the window. People were greatly impressed that the motherless child not only survived, but thrived and by the end of the year eight more children were brought to Miss Kersey's Home for care. As her house was too small to accommodate the increasing number of such children, it became necessary to find new accommodation and a modest house was built for her in the hospital premises where she cared for these children with the help of young nurses in training. The first child was named Elma Kersey and is still living, happily married and with children of her own. In 1953, Kersey's Children Home moved to a new site where it now caters as a home for motherless babies and also as a day centre for other children needing care.

The Catholic Mission was no exception in this great task. In 1886, the first nuns came to Abeokuta. The Sisters did not at first go out to work amongst the people, but worked within the convent in accordance with the rules of their order. A few years later, a Sister Marie of the Assumption suggested that they should go out and search for exposed or abandoned babies; 'and in that work, she would have been most successful', remarked Father Coquard, recalling her strong personality. Although at first Sister Marie was opposed by the other nuns, in a few years time, they not only worked among the less fortunate children but also cared for the sick in huts, hospitals and prisons.

Father Coquard, a French soldier and sailor who had landed at Senegal in the West Coast of Africa in 1882 and was struck by the poverty, disease, death and human suffering returned to Abeokuta in 1890 after he had been ordained as a priest and worked for several years under Father Francois (Thorpe, 1956). As well as inaugurating the leper settlement in 1897, he built the Sacred Heart Hospital and a child-welfare centre where he took children in need of care. Despite difficulty in raising funds to care for these children, he carried on his good work for forty years. In appreciation of his work, the British

Government awarded him the O.B.E. and the Egbas (Natives of Abeokuta) honoured him with the chieftaincy title the Basegun (Father of physicians) although he had no medical qualification. "Father Coquard is an old man" wrote the Governor, Sir Hugh Clifford, to the Secretary of State for the Colonies in 1925, "who is unlikely to be able to continue his work in Nigeria much longer, and it is of the utmost importance that the confidence which he has won and established should not be lost when he leaves Nigeria". But he never left Nigeria! He died in his own Sacred Heart Hospital in 1933 and his work, especially amongst the destitute children will always be remembered.

As city life became more sophisticated, the problems of illegitimate and abandoned children grew (Fig. 1) but voluntary organizations began to take an interest. Thus, Ibadan Home for motherless babies was opened by Mrs. R. O. Solanke in 1960, St. Joseph's Home for motherless babies, Ibadan pioneered by Mrs. Carol Downing in 1962, the Save the Children Fund, an international voluntary organization had a branch established in Ilesha in 1963 and the Motherless Helpers' League, Ilora was founded by Mrs. A.A. Taiwo in 1966. Today, all



Fig. 1. A CONSTABLE CARRYING AN ABANDONED CHILD.

■ Constable Elizabeth Santos with child yesterday.

Child abandoned near rail line

A DAY-OLD baby girl was yesterday found abandoned on the railway line near Idiro on the outskirts of Lagos.

The baby was found wrapped in a piece of cloth in a bush on the railway line near the premises of Doman Long Company, Idiro, at about 12.15 p.m. by a police constable who was accompanied by a man.

The man had sought permission to ease himself and

he walked a few yards from the bush path to the railway line where he found the baby, a source said.

Police were last night working on the theory that the baby might have been abandoned by her mother shortly after delivery.

Meanwhile, detectives have mounted a big hunt for the fleeing mother while the child has been taken to the Lagos Motherless Babies' Home.

these organizations operate separately but with similar aims and objectives. The exemplary work of these voluntary organizations has made a tremendous impact for not only are relatives more willing to accept responsibility of caring for these children in their own homes, but unrelated members of the general public are beginning to face up to the task. A few foster parents are to be found who take on full responsibility for caring for abandoned or neglected children, but such people are still very few, and proper adoption is non-existent for reasons which will be discussed in a later chapter.

(iii) INFANT AND MATERNAL MORTALITY IN NIGERIA AND OTHER COUNTRIES

Examination of the infant mortality rates in 13 selected countries between the years 1920 to 1963 (Table 1)^{SE} reveals the progress made in infant health and welfare in most developed countries but on the other hand the still appalling situation in Africa.

Infant Mortality in Africa

The infant mortality rates for most of the countries in Africa have not been recorded long enough to allow any definite trends to be established. Most rates that are available are based on small samples of population and some of them on selected populations with intensive medical coverage. Nevertheless the results of these limited studies reveal the tremendous wastage of life during infancy and childhood.

The vagueness of estimates of infant mortality in different parts of Africa was clearly shown in the 1st International Conference on the African Child (Sharpe, 1931). Rates given for infant mortality ranged from 100 to 820. According to Jelliff (1952), the estimated infant mortality rates for 1946 in the main West African

= Tables 1-72 are in Volume II - Appendix A.

sea-ports were Lagos 109.7; Accra 110; Bathurst 153.8; Freetown 208. Nhonoli (1954) gives relatively reliable figures for a Christian group of the Nyanwezi tribe in Tanganyika for the period 1941-1952 in which the infant mortality rates ranged from 145-462 (Table 2).

Platt (1954) in a survey into the relationship between food intake and infant mortality in West Africa found very high rates in the Gambia (Table 3). He states that "Babies born to poorly fed mothers are generally underweight and they often die in infancy and childhood. Infant mortality data for poorly fed communities are unreliable. There is nevertheless evidence that in tropical countries, rates are from ten to a hundred fold higher than in this country (United Kingdom)". Recent investigators, Gardner and Gardner (1959) and Morley (1963) in Northern and Western Nigeria respectively, show that about half of the children died before their fifth birthday. Morley (1963), in his analysis of deaths in the under fives, showed that in Imesi, a West African village, the infant mortality rate was about ten times and the childhood mortality rate nearly three hundred times higher than in England and Wales (Table 4).

An independent study carried out by Wennen (1964)

confirmed the high mortality experience in infancy and childhood. He followed up 1,027 registered new-borns in Igbo-Ora, a Western Nigeria village, for a period of three years and found the highest mortality was in the first and second year of life and continued to the third year (Table 5). Gilles in 1964 (Table 6) confirmed that high mortality in infancy and childhood is a common occurrence in rural areas of West Africa.

Infant mortality in selected countries

In the countries which render returns of infant mortality, a true international comparison of the present-day levels cannot be made in view of the gross under-registration from the developing countries. The world is divided into four major groups according to their mortality experience (Demographic Year Book; United Nations, New York, 1952). These groups are:

1. Low - Areas with an infant mortality rate below 35 per /1000 live births.
2. Moderate - Areas with rates between 35 and 75.
3. High - Areas with rates between 75 and 125.
4. Very high - Areas with rates above 125.

This division into four groups is revealing when the infant mortality rates from 1920-1963 are considered

for the countries given in Table 1. England and Wales and Scotland which were in the 'high' group are now in the 'low' group and another European country, Spain, has experienced an even more dramatic reduction in infant mortality. In 1920 it was in the 'very high' group with an infant mortality rate of 148.2 and is now in the lower range of the moderate group with a rate of 40.7 in 1963. India has gone a long way to reducing its infant mortality, although the rate in 1963, 72.8, is still higher than other Asian countries, unlike that of Japan which has attained the lowest group. Sweden which had a relatively low rate in 1920 has now reached the lowest rate of all the countries considered with a rate of 15.0.

Along with Chile, the African countries occupy the worst position. Although there are no available figures for most of the African countries for the first twenty years of the period under review, the figures were presumably exceedingly high. Ghana, Nigeria, Sierra Leone were originally in the 'high group', but Nigeria has now progressed to the 'moderate' group.

Whilst this chapter is not concerned with the causes of infant mortality, it is worth noting however that the countries with the lowest infant mortality are the most advanced countries, where the standard of living is high

and child health and welfare services are well developed and firmly established. On the other hand, the countries with the highest rates are the developing countries in Africa and Latin America where living standards are low and preventive and curative health services leave much to be desired. It may also be noted that Sweden and the United Kingdom have managed through long established and well organised maternal and child health services to control those conditions in the post neonatal period, such as infectious and other diseases, which are responsible for the high mortality rate in other countries.

Maternal Mortality

The factor of maternal mortality per se as a cause of infant mortality cannot be under-emphasised or ignored especially in developing countries where the incidence of maternal deaths is high.

Maternal Mortality in Africa

The appalling maternal mortality in tropical Africa has long been recognised although the magnitude of the problem is not accurately known. For some areas data are not available and for other areas, they have only been recorded in recent years.

With the exception of Lagos where there is an attempt to register births and deaths, reliable data on maternal mortality in Nigeria are unavailable. Published figures from hospital records are not truly representative of the general position in Nigeria because of the highly selective nature of cases admitted. Table 7 shows the trend in maternal mortality from obstetric causes in the University College Hospital, Ibadan during the ten year period from 1958 to 1968 when among hospital deliveries, the maternal mortality rates fell from 28.3 to 14.4. Table 8 gives the figures over the same period for Wesley Guild Hospital, Ilesha, where there are also facilities for specialists' care especially for complicated cases. In both hospitals, over the same period of ten years, there has been a definite fall in maternal mortality but the mortality rates for the University College Hospital, Ibadan are higher than those of the Wesley Guild Hospital, Ilesha. This is probably due to a factor of selection rather than of the quality of obstetric care since more complicated cases and less normal deliveries are dealt with in the former hospital. Further analysis of maternal deaths in Ibadan hospital shows that there are more deaths associated with emergency than with booked cases (Table 7).

Maternal Mortality in other countries

As already stated, maternal mortality rates are not available for most of Tropical Africa. The extract of the 1969 World Health Statistics report (Table 9) shows maternal mortality rates from 1951 to 1966 in seven selected non African countries. A striking feature of these figures is that most of the countries have shown no appreciable change since 1961 possibly because the factors which contribute to maternal mortality have been largely brought under control. Figures from the Demographic Year Book (United Nations, 1968), (Table 10) show that in 1961 and 1962, Nigeria (Lagos) had rates of 44.9 and 38.3 respectively as compared with those of England and Wales of 1.1 and 1.2 respectively and of Sweden which was lowest with rates of 0.6 and 0.4 respectively. If this reflects the position in Lagos, the capital city of Nigeria which has facilities for specialists' care, then it is probable that maternal mortality for the whole of Nigeria must be exceedingly high.

Discussion

1. Infant Mortality

The child in the 0 to 5 year age group is exposed to many diseases and infections such as gastroenteritis, bronchopneumonia, measles, malaria and tuberculosis often in the presence of severe nutritional disorders. Their effects and significance are considered in a later chapter.

2. Maternal Mortality

In developed countries where the standard of living is high and there is better professional and lay education for child-birth and good antenatal facilities, maternal mortality has fallen. In the developing countries on the other hand, there are many factors such as poverty, ignorance, cultural and social factors, and lack of medical facilities responsible for the high maternal mortality.

- (a) Poverty: In Nigeria, the amount of income decides the level of nutrition of the family and particularly of the nursing mother. The average

income is far lower in the developing countries of West Africa than in the economically advanced countries of Europe and America. The per capita income figures in selected countries in January 1969 are shown in Table 11. The average incomes of West African countries were between \$18 to \$119 whilst those of the developed countries varied from about \$600 to more than \$1,000. United States' per capita income of \$1,322 was about twice as much as Britain's and forty times as much as Nigeria's. According to Oyebola (1970) these figures give only a general picture because many families in the rural areas in West Africa have an income of less than \$12 a year, although they grow some food crops for their own consumption. In view of this, an average expectant Nigerian mother has to work until late in pregnancy in order to augment the family income, and thus she is unable to prepare herself adequately for her confinement.

- (b) Cultural and Social Factors: After good antenatal care it is not uncommon for some of the village women whose husbands are working on farms to leave for the farms just before confinement in the belief that misfortune during delivery will be avoided by

by being near their husbands. Some mothers prefer the traditional 'midwives' who have played a necessary but often damaging role for many years in assisting women in confinement. These 'midwives' have no knowledge of the basic rules of health and hygiene nor understanding of any obstetrical procedure.

- (c) Ignorance and Lack of Medical Facilities: Because of lack of education, many expectant mothers fail to make full use of the medical facilities provided. Women who come to the hospital in labour for the first time have either not had any antenatal care or have defaulted from regular clinic attendance. Although the number of hospital and maternity and child welfare centres in the Western State are increasing (Table 12), they are poorly equipped and cannot cope with emergency cases in any of the maternity centres. In the whole state, there is no adequate provision for blood transfusion or for a system of flying squads for emergency cases. Patients who need urgent treatment cannot reach the hospital in time because of inadequate arrangements and poor means of transport. Because of such

deficiencies and ignorance, many high risk mothers continue to die of complications of pregnancy and delivery which are largely preventable. Table 13 shows that maternity causes headed the list of deaths in the 15-44 year age group in Lagos in 1970. The various obstetric causes of maternal death in Lagos University Teaching Hospital and University College Hospital, Ibadan are shown in Tables 14 and 15 respectively.

CHAPTER II

THE WESTERN STATE OF NIGERIA

- (i) Demographic and geographical description of the Western State of Nigeria.
- (ii) Child health and social services available to the under-fives in the Western State.
- (iii) Agencies for the care of motherless babies in the Western State.

Figure 2 - Map of West Africa

Figure 3 - Map of Nigeria showing the 12 States.

Figure 4 - Map of the Western State showing the main towns, roads and railways.

Fig. 2. MAP OF WEST AFRICA

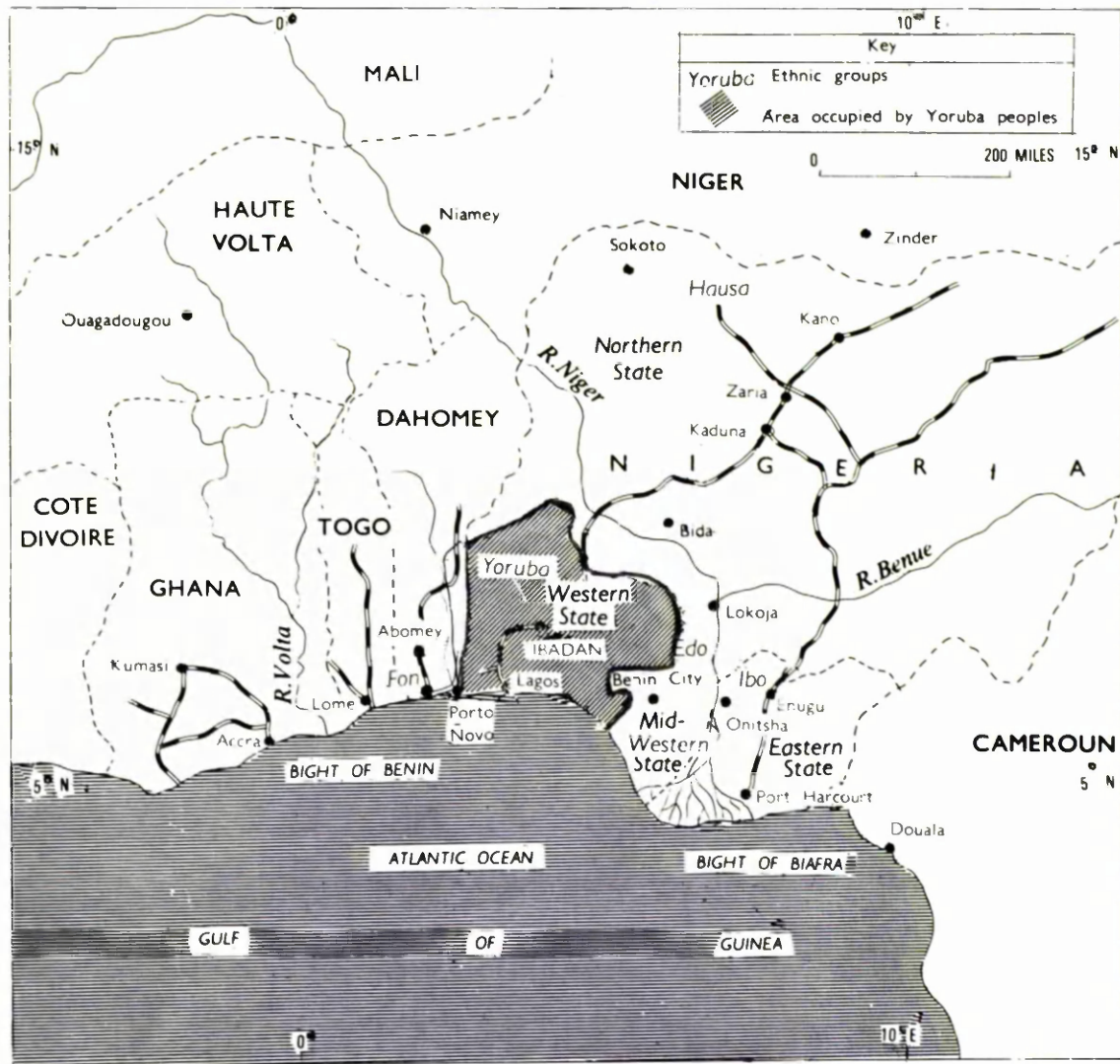
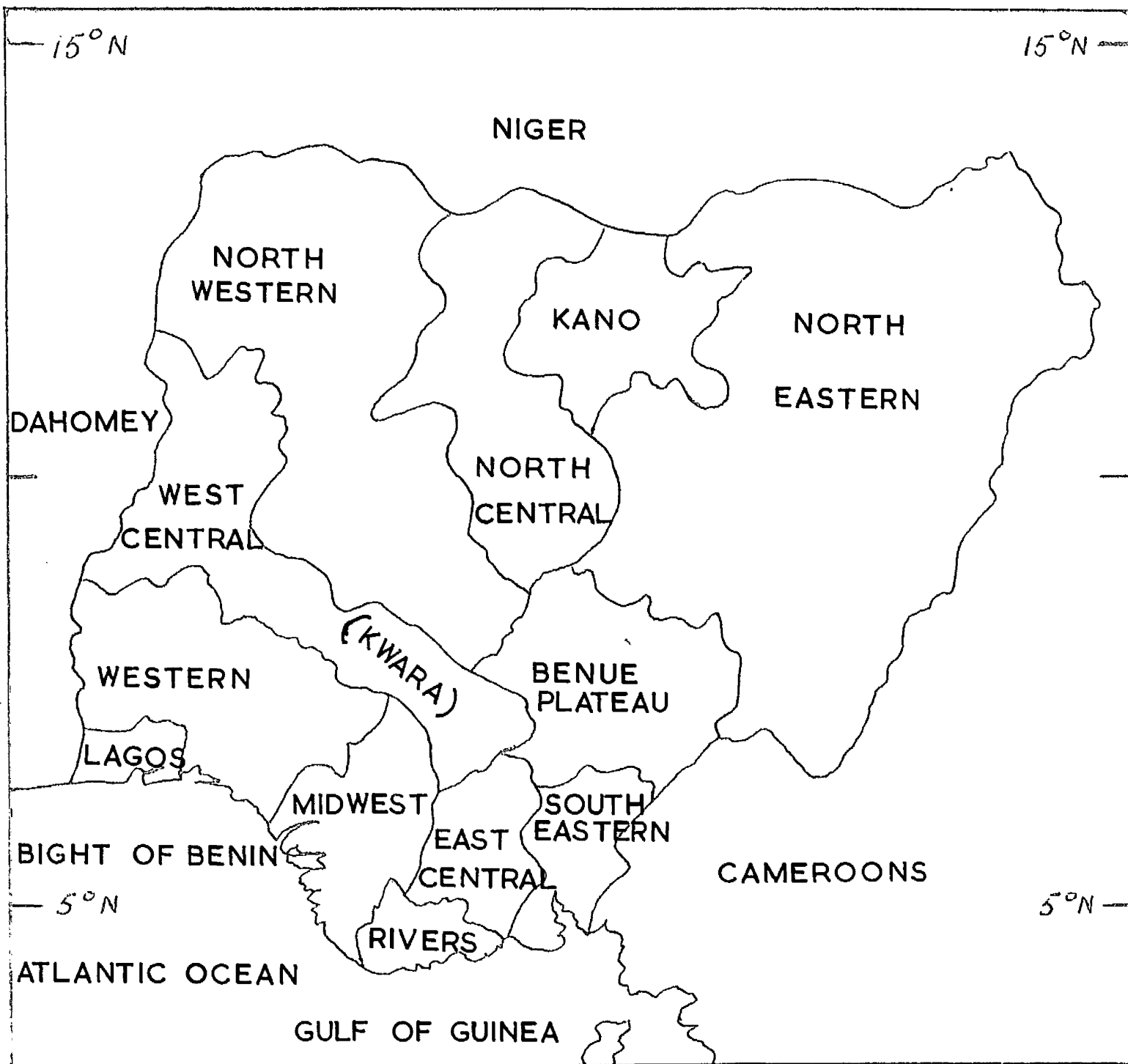
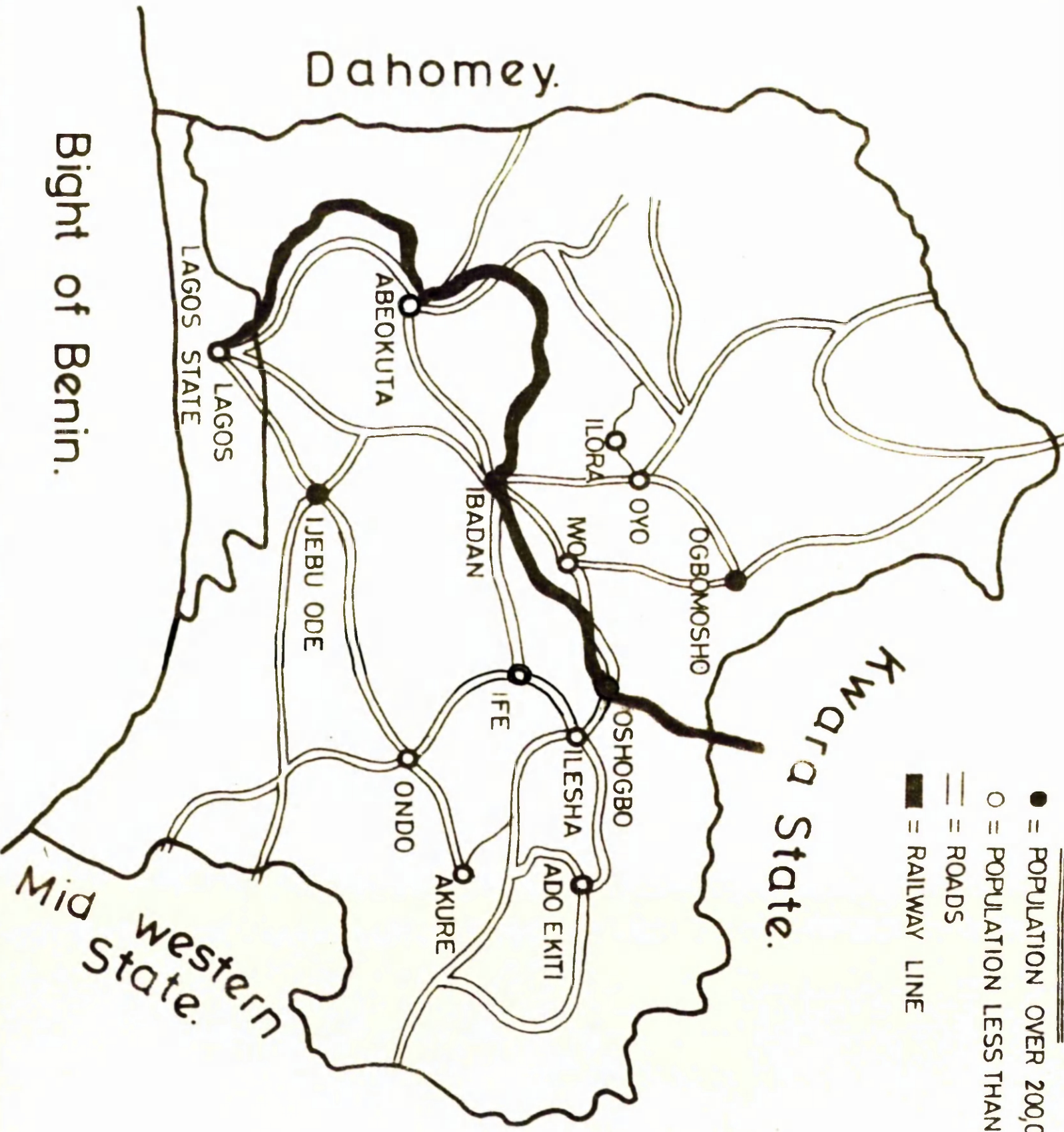


Fig. 3. MAP OF NIGERIA SHOWING THE 12 STATES.





- = POPULATION OVER 200,000
- = POPULATION LESS THAN 200,000
- == = ROADS
- = RAILWAY LINE

Kwara State.

Dahomey.

LAGOS STATE

LAGOS

ABEOKUTA

IBADAN

ILORIN

OYO

OGBOMOSH

OSHOGB

ILES

ADO EKITI

IFE

ONDO

AKURE

IJEBU ODE

Mid western State.

Bight of Benin.

CHAPTER IITHE WESTERN STATE OF NIGERIA

(1) Demographic and Geographical Description of the Western State of Nigeria.

Nigeria (Nigeria, 1970) lies between latitudes $4^{\circ}21'$ and $14^{\circ}00'$ North and longitudes $2^{\circ}21'$ and $14^{\circ}30'$ East. It is bounded on the north by the Republic of Niger, on the west by Dahomey, on the east by the Federal Republic of Cameroon and Chad and to the south by the Gulf of Guinea (Fig. 2).

According to the latest census, that of 1963, Nigeria has a population of 55,620,268 (Table 16) and covers an area of 356,669 square miles.

Before May 1966, Nigeria was divided into four regions, and the Federal territory of Lagos. These regions with their capitals were Western (Ibadan), Eastern (Enugu), Northern (Kaduna) and Mid-Western (Benin-City). In May 1966, just before the start of the last civil war, a decree was published providing for the creation of twelve states. The twelve states (Fig. 3) are North Western, Kano, North-Eastern, North Central, West Central, (otherwise known as Kwara State), Benue-Plateau, Western, Mid-western, East Central, South Eastern, Rivers and Lagos. The principal

towns with their populations are Ibadan (627,379), Lagos (665,246), Port Harcourt (179,563), Kaduna (149,910), Enugu (138,457), Benin (100,694) and Kano (295,432). The present study is concerned with the Western State which is now described in detail.

THE WESTERN STATE OF NIGERIA

Demographic and Geographical Description

The Western State (Fig. 4) is bounded by Lagos State and the Bight of Benin to the south and the Republic of Dahomey to the west, the Kwara State to the north and the Mid-Western State to the east. According to the last population census of Nigeria in 1963, the Western State covers an area of 30,454 square miles and has a population of 10,265,846. The principal towns with their populations are Ibadan (627,379), Ogbomosho (319,881), Oshogbo (208,966), Abeokuta (187,292), Ilesha (165,822), Ado-Ekiti (157,519), Ife (130,050), Oyo (112,349).

The Western State lies between the high forest zone in the south and the Savanah in the north. In the former zone, the vegetation is of the normal equatorial forest, and the savanah is a belt of grassland.

There are two main seasons, a dry one from October to May and a rainy one from June to September. Rainfall

varies from 45 inches per year in the northern area of the State to 100 inches in the south east. March and April are the hottest months, November and December the coolest. Temperatures range from 65°F to 90°F and the relative humidity is high ranging from 50 to 95 per cent.

People

The State is peopled by the Yoruba of whom 49% are Christians, 43% Moslems, and the rest belong to other indigenous religions, (Table 17). It is mainly an agricultural state with about one third of its employed persons engaged in crop production (Table 18), is the world's largest producer of cocoa and it also exports rubber and palm oil. Other food crops include rice, maize, beans, yams, cassava, plantains and a variety of fruits.

Education

Until the early 1940s, most of the schools were run by the Anglican, Catholic, Methodist or Baptist Missionaries to whom the government merely gave financial assistance. In recent years, the government has shown a great interest in educational development and since Nigeria's independence in October 1960, educational facilities especially at secondary education level have increased tremendously (Table 19). Free primary education has been provided since

1955. There are two universities, the State owned University of Ife, established in 1962, and that of Ibadan, Federal Government owned and established in 1948. Despite free primary education and the increase in educational facilities, the illiteracy rate is high.

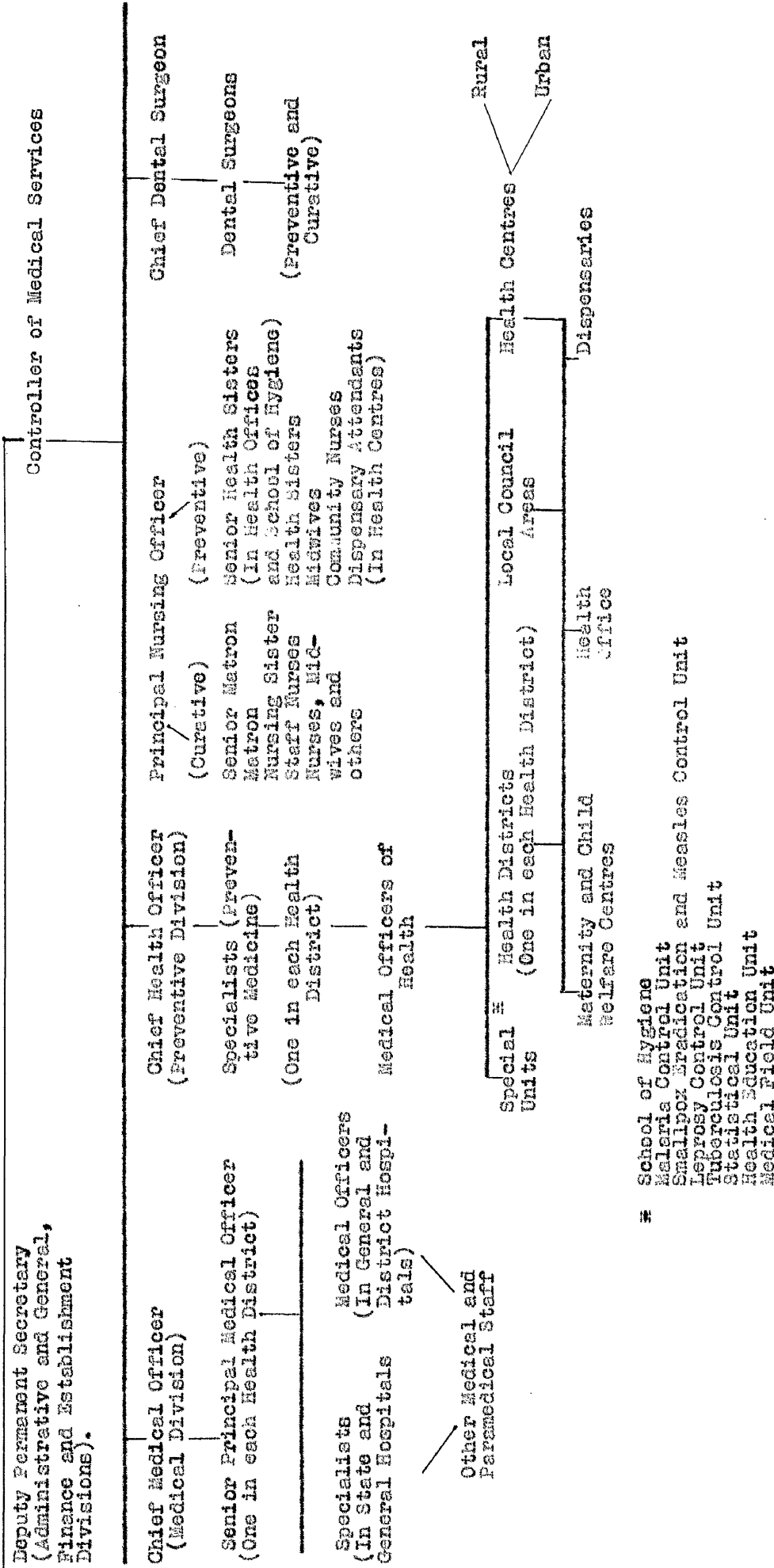
Medical facilities

The general health, hospital and public health services are the responsibility of the government of the Western State although co-ordination between the State and the Federal Government of Nigeria is achieved through the National Council of Health Services which was founded in December, 1961. The organization and coverage of medical services in the state will be described in detail later. Although the University College Hospital, Ibadan is situated within the State, it is nevertheless administered by a Board of Management responsible to the Federal Government. This hospital provides facilities for the training of doctors, nurses, and laboratory technicians and has specialist facilities and specialised units in paediatrics, surgery, medicine, obstetrics, and gynaecology. Thus many cases are referred to it by medical officers of health, hospital specialists and also by general practitioners from other parts of Nigeria.

Fig. 5.

ADMINISTRATIVE AND ORGANIZATIONAL PATTERN OF THE CURATIVE AND PREVENTIVE MEDICAL SERVICES

Permanent Secretary of Health ← Health Advisory Board



(11) CHILD HEALTH AND SOCIAL SERVICES AVAILABLE TO THE UNDER-FIVES IN THE WESTERN STATE.

(a) MEDICAL SERVICES

The Ministry of Health of the Western State contains four broad divisions, Preventive, Curative, Administrative and General, and Finance and Establishment. Fig. 5 shows the administrative and organizational pattern of the Curative and Preventive Medical Services which in view of their relevance to the present study are now considered in detail. The Chief Medical Officer and the Chief Health Officer are in charge of the Curative and Preventive Divisions respectively and both are responsible to the Controller of Medical Services himself under the overall supervision of the Permanent Secretary of Health. Also under the Controller of the Medical Services are a Principal Nursing Officer and a Chief Dental Surgeon.

A Health Advisory Board with eight health district committees was created by decree in April, 1968, and its duty is to advise the government on the planning, organization and utilization of the medical services in the State.

Curative Medical Services

The State is divided into eight Health Districts in each of which there is a State Hospital with facilities for specialist treatment and also General and District

Hospitals. In charge of each Health District is a Senior Principal Medical Officer, responsible to the Chief Medical Officer who coordinates the work of all medical officers and specialists in the State Hospital as well as that of medical officers in charge of the General and District Hospitals.

Preventive Medical Services

A similar pattern of eight Health Districts is in operation. The Specialist in Preventive Medicine is responsible to the Chief Health Officer and coordinates the work of the eight district Medical Officers of Health and that of the district health nursing and health inspectorate staff.

Apart from these government health services, there is in each local authority area a local council with a Medical Officer of Health. Each council provides medical care in the dispensaries and maternity and child-welfare centres which are staffed by medical officers and health nurses.

HOSPITAL FACILITIES

Table 20 shows the medical institutions by ownership in the Western State. There are 64 hospitals and nursing homes, 36 owned by the government, 14 by missions and 11

built and run privately by individual doctors. Of the 36 government hospitals, 12 are State hospitals with facilities for specialist treatment. Although young children under five years make the greatest demand on curative medical resources, there is no separate children's hospital in the whole state. Many children under five who require in-patient treatment or even observation should be admitted to hospital but very often cannot be because of shortage of cots. According to Owen, 1967, there were 153 cots and 1,506 beds in the 23 hospitals surveyed, a ratio of 10 beds to 1 cot. (Table 21).

Table 22 gives the distribution of doctors in Nigeria. In the Western Region, there are 330 doctors but at any one time, 100 to 150 doctors are overseas or on study leave. Table 23 which gives the medical and public health staff per population in the Western State of Nigeria shows that the doctor-population ratio is 1:36,000. Most of the doctors prefer to work in cities and according to Owen (1967) 150 (46%) of them were in Ibadan alone, which meant that the smaller towns and villages had less medical coverage compared with the big towns. The only five doctors in the whole State who have specialised knowledge of childhood

diseases are employed in two large hospitals in the state capital, Ibadan.

Annual returns from fourteen hospitals in the state² show that of 969,508 people seen at general out-patient clinics, 638,336 (65%) were under twelve years of age. Although a detailed analysis of these figures into smaller age group is not available, it is known that most of these children are under five years, and that the doctors may see up to two hundred at one session.

There is an acute shortage of nurses. Most of them are State registered with a year's training in the State hospitals in midwifery although a few nurses still go abroad for their training. The nurse population ratio is reckoned as one nurse to 9,000 people.

Pharmacists are few in number and most have been locally trained. It is reckoned that for every pharmacist there are 254,000 people which means that mothers often with other children at home have to wait for periods up to one or two days before they can start their children on treatment.

² Annual Statistical Bulletin 1969; Ministry of Health, Western State of Nigeria.

PUBLIC HEALTH FACILITIESMaternity and Child Welfare Centres

There are 362 maternity and child-welfare centres in the state, 277 run by local authority, 22 by Missions, 62 by private individuals and one by the State Government. 14 of them form part of a Health Centre. The term Health Centre is applied to a complex of buildings which includes a maternity centre, usually with four to eight maternity beds, a dispensary and a health office with staff quarters. These centres have no resident doctors but medical officers attend about once a week. Day to day running of the centre is performed by midwives and public health nurses who are in administrative charge. The midwives are women trained locally in midwifery but who do not possess a general nursing certificate and the public health nurses are state registered nurses with a year's training in midwifery and a diploma certificate in public health. Both midwives and health nurses carry out immunizations against diphtheria, whooping cough and tetanus and B.C.G. and smallpox vaccinations. In addition to their routine antenatal and postnatal duties, they treat minor ailments and give health education talks. These midwives have no facilities for in-service training in child-care and

although they play an important role in the running of these centres, one can appreciate their limitations. The medical officers are also limited in what they can do as very sick children invariably have to be referred to the nearest State General or District Hospital because of shortage of drugs or equipments. In other words, most of these centres are beneficial only to healthy babies.

In addition to public health nurses and midwives, there is another grade of nursing staff known as community nurses who are trained midwives with one year training in first aid, home economics and patient after care. Although the role of a community nurse in any developing country is important, this factor is not fully appreciated as they are being trained at a rate of only 8 per year (Table 24) a number which cannot yet make any effective contribution to the medical services of the State.

Rural Health Centres

There are 13 rural health centres in the State; 10 belong to the government and 3 to local authorities. All are staffed by public health nursing sisters and midwives and a doctor visits once a week. Maternity and child welfare services are provided in these centres, minor ailments are treated and people attend for injections and

dressings.

Dispensaries

There are 445 dispensaries scattered all over the State, usually situated in rural areas and staffed by dispensary attendants whose duties include distribution of drugs to the patients at the direction of the visiting medical officer or nurse. The dispensary attendant is also responsible for dressing wounds and tropical ulcers which commonly occur in children. There is a population ratio of 16,000 people to 1 attendant.

Dental Centres

There are only seven dental centres in the whole State, 6 administered by the government and one by a mission. In these centres which are staffed by dentists and by dental auxiliaries who are mostly young persons undergoing a modified form of training, preventive and curative dental services are offered.

(b) SOCIAL SERVICES

Although much neglected in the past, social services of a statutory nature to promote the development and well-being of all children have expanded rapidly in the last decade. Nevertheless the extent of social problems

is unknown as no register of children requiring such services is kept.

The categories of children for whom social services are provided are as follows:

1. Physically and mentally handicapped under 16 years of age including the blind and partially blind, the deaf and partially deaf, the spastics and the mentally handicapped.
2. Homeless children under five years of age.
3. Motherless babies under five years of age.

The main agencies responsible for the care of these children are the government, religious and voluntary organizations and although these work independently, it is not uncommon for one to seek the help of another. Before considering in the following chapter the nature and range of services provided for homeless children and motherless babies, observations are made on current difficulties with some comments on the education, management and training of physically and mentally handicapped children in the Western State. Such problems include:

1. General indifference of parents and the community alike to the welfare of these children.

2. Poverty of parents and/or their unwillingness to finance educational provision where it is not free.
3. Inadequate accommodation in residential schools.
4. Shortage of educational facilities such as Braille books and other specialised apparatus and also a shortage of trained teachers with specialised training in such methods.
5. Frustration on the parts of teachers of the handicapped arising from inadequate appreciation of financial reward for their efforts.
6. Inadequate rehabilitation and resettlement facilities in the field of gainful employment.

(iii) AGENCIES FOR THE CARE OF MOTHERLESS BABIES IN THE WESTERN STATE.

Introduction

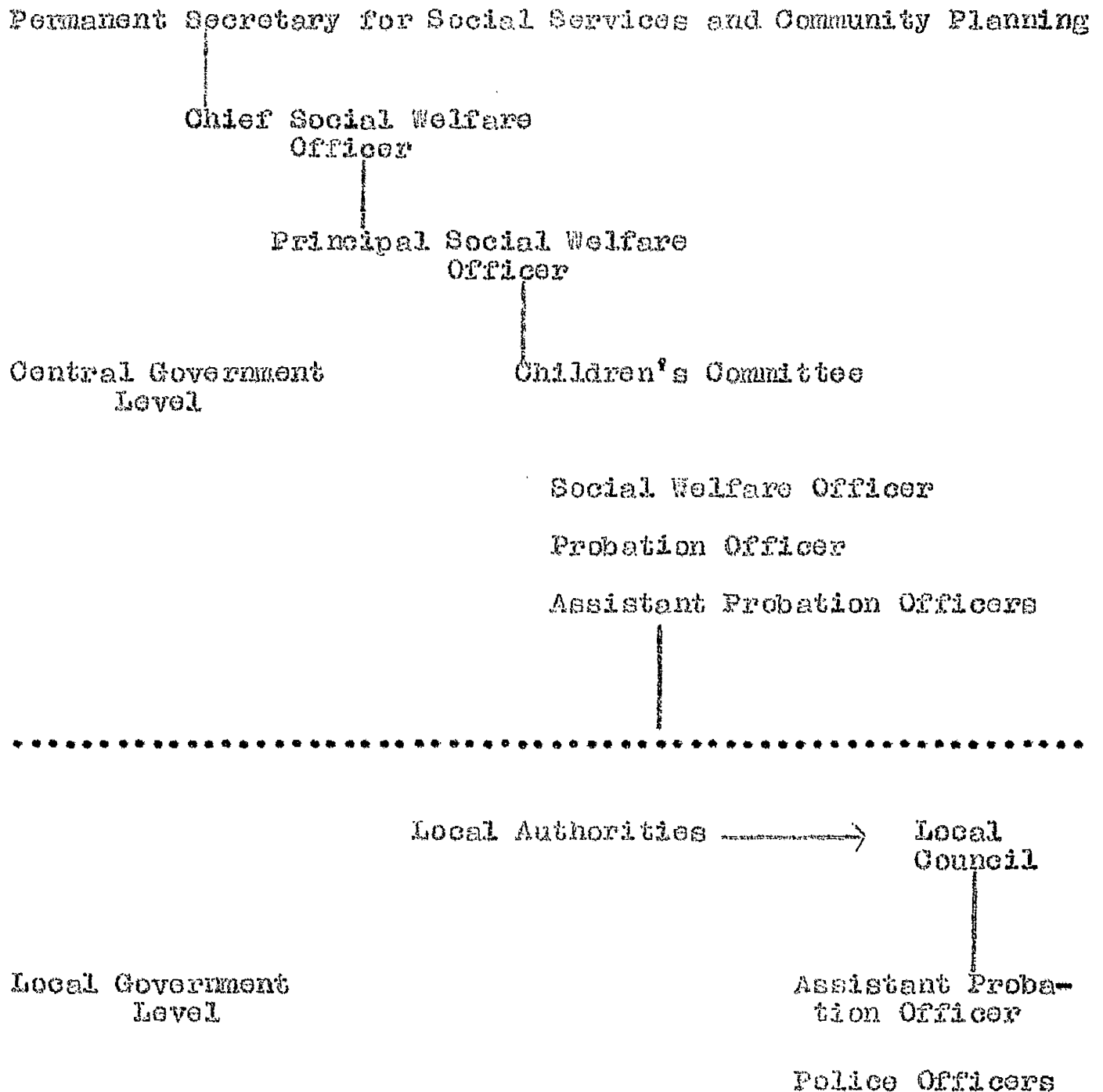
Although there have always been children deprived of normal family life, the Nigerian society usually coped with them in the extended family structure. Poverty, urbanization and the changing concept of the family as a social institution have altered this custom and made it necessary for special attention to be paid to these children at national and local levels.

Because of lack of proper care and inadequate diet due to poverty, many motherless babies have to be separated from their families so that they can have good care and even survival.

Industrialization in the Western State has greatly increased the process of urbanization and attendant with this the evils of city life, so that in many of the large towns, unwanted children are often abandoned. The government, religious organizations and private individuals moved by the plight of these children who are either homeless or deprived of normal maternal care have set up agencies to cater for their needs.

Fig. 6.

Organization of Social Services for the motherless babies
in the Western State of Nigeria



ORGANIZATION OF SOCIAL SERVICES

Figure 6 shows the pattern of social services in the Western State which is divided into eight local administrative areas, Ibadan, Abeokuta, Ijebu, Oshogbo, Oyo, Akure, Ado-Ekiti and Ife. Responsibility for the local functioning of the social services concerning motherless babies usually rests with the local authority councils whose powers and duties are derived directly from the headquarters of the State government. Police officers in each local council area or assistant probation officers of whom there are four in Ibadan and one in each of the other seven administrative areas take the children into care and are responsible to the local councils.

At the central government level, the Ministry of Social Services and Community Planning established a children's committee which consists of a social welfare officer, one probation officer and four assistant probation officers working in collaboration with other services such as the voluntary and religious organizations. The social welfare officer is mostly concerned with the administrative aspects and the probation officer is responsible for the relevant field work including selection and supervision of foster homes. This children's committee is responsible to the Principal and Chief Social Welfare

Officers who are in turn responsible to the Permanent Secretary for Social Services and Community Planning.

All the administrative organization and services are concentrated in Ibadan because it is there that these services are most needed. There are few homeless children in other towns and these are usually referred by police officers or assistant probation officers to Ibadan or one of the other residential homes in the Western State.

A. Government Agencies

In 1946, a committee was set up by the government of what was then the Western Region to consider ways and means by which protection could be afforded to children who were homeless or neglected. In July 1946, the Children and Young Persons' Law was passed which implemented recommendations made by the committee. This law is now contained in Laws of the Western State, Part V, Chapter 20, under the title "Juveniles in need of care and protection". The main provisions of this law (cf Appendix B) are concerned with "social protection" of a child or young person who comes within any of the following categories:

- (a) Who is an orphan, or is deserted by his relatives.
- (b) Who has been rejected or ill-treated by the person having the care and study of such child.
- (c) Who has a parent or guardian, who does not exercise proper guardianship.
- (d) Who is found destitute and has both parents or his surviving parent undergoing imprisonment; or
- (e) Who is under the care of a parent or guardian who by reason of criminal or drunken habits is unfit to have the care of the child.

Services

The services rendered are as follows:

1. Placement of homeless children

There are three types of placements offered by the Ministry.

(a) Fostering

This is the first aim especially for long term cases but there are only 18 foster homes in the Western State, all of which are

situated in Ibadan. Eight of these homes are run by religious organizations and ten by the government of the Western State.

(b) Admission to hospitals

This is used for short stay cases especially for children needing medical care who through abandonment have been exposed and starved.

Between September 1969 to September 1970, two such children were admitted to the State Hospital in Ibadan.

(c) Admission to residential homes

This is the least desirable method and is reserved for homeless children under six months for whom foster parents have not been found. Between September 1969 and September 1970, five such children were admitted to two of the three residential homes in the Western State.

2. Home visiting and supervision

A probation officer who underwent a three month training course in social work at University College Hospital, Ibadan has as her main assignment the supervision of foster homes and has to visit all the ten

foster homes once monthly. A corrective order removing from the foster parent any child not receiving proper care can be made by a magistrate's court. The probation officer also visits children in hospitals and institutions, and makes provisions for their early transfer to suitable foster parents.

3. Finance

An allowance of £3 monthly is paid directly by the local authority or by the State Government to foster parents.

4. Review of Children's Progress

The progress of each child in care is reviewed every three months. The probation officer presents a case work report on each child to the children's committee and an official of the Ministry of Social Services and Economic Planning. Joint discussions take place as to any further action necessary.

5. Recruitment of foster parents

It has been extremely difficult to find suitable foster parents and in consequence it has not been possible to insist on too high a standard of recruitment.

Prospective foster parents are interviewed by a panel consisting of the social welfare officer, the probation

officer and a ministerial representative. The home environment of the foster parents is inspected and their educational level considered. A foster parent must have had at least a primary education.

B. Religious Organizations

Two religious organizations care for homeless children, the Kersey Children's Home in Ogbomosho, and the Catholic Mission Orphanage in Ado-Ekiti.

Kersey Children's Home which accommodates about 25 children was founded in 1925 by Miss Ruth Kersey, the first Baptist Mission nurse in Nigeria. The Catholic Mission Orphanage was started in 1948 by a European missionary, the Rev. Dr. David Field, the then Parish Priest in Ado-Ekiti.

These two homes admit children from all the Western State and also from parts of the Mid-Western State. They provide immediate and long term care of motherless babies, and also health education to any of the relatives who visit the children. Babies are usually kept until about the age of fifteen to eighteen months when, if possible, arrangements are made for fostering or return to relatives.

The government of the Western State gives a grant of about £1,500 yearly to each home. Donations are also received from private individuals and also from their respective churches in Nigeria and abroad. The relatives are also expected to contribute £3 monthly.

The present policy of the Catholic Mission Orphanage is to admit only abandoned babies and not motherless babies who have other relatives. These relatives are given advice in child care and encouraged to look after the babies.

C. Voluntary Organisations

There are four voluntary organisations for motherless babies:

1. Ibadan Home for Motherless Babies, Ibadan.
2. St. Joseph's Home for Motherless Babies, Ibadan.
3. Ilora Motherless Helpers' League, Ilora.
4. Save the Children Fund, Ilesha.

1. Ibadan Home for Motherless Babies, Ibadan

In 1960, a Nigerian nurse in the University College Hospital, Ibadan, Mrs. Rebecca Solanke, moved by the plight of a baby whose mother had just died in childbirth, decided such children

must be helped. In that same year, she founded what was called the National Home for Motherless Babies. The Home was an ordinary modest house in Yemetu, a crowded area of Ibadan. It has since moved to a new site and renamed "Ibadan Home for Motherless Babies". At present, the home which caters for about 35 children provides immediate and long term care for motherless babies and arranges foster homes for other homeless children. It is supported largely by contributions from individuals and other voluntary organizations at home and abroad.

2. St. Joseph's Home for Motherless Babies, Ibadan.

This home was founded in 1965 by Mrs. Carol Dawning, a European resident in Ibadan, who during her voluntary service in the Catholic Mission Hospital, Ibadan, witnessed the high infant mortality. The home is situated in the premises of the Mission Hospital and is non-denominational.

Before 1968, it provided for immediate and long term care of children but in that year it closed due to lack of finance and shortage of trained staff. It reopened in 1969 as a day care

for motherless babies and also for malnourished children attending the hospital out-patient department.

At the day care centre, demonstrations to illustrate what types of food are suitable for healthy living are given with advice on the general care of babies. Immunization is given against diphtheria, tetanus and whooping cough, and vaccination against tuberculosis and small-pox.

The non-demoninational lay committee which runs St. Joseph's Home also acts in a small way as an agency for fostering out appropriate children and in addition supervises the homes of children attending the centre. Financial aid and free milk are given to families of motherless babies.

The organization is supported by contributions from the Catholic Mission hospitals and churches in Nigeria, from private individuals and other voluntary organizations.

3. Ilora Motherless Helpers' League, Ilora

In 1966, the organization was founded by the health sister in charge of Ilora Health Centre,

Mrs. A.A. Taiwo, who saw at first hand the needs of motherless babies amongst those brought to the health centre in Ilora.

The activities of the League have expanded in the past few years as motherless babies are referred to the health centre not only from Ilora, but from other towns and villages within a ten mile radius. Services for the children are incorporated into the normal routine duties of the staff who include two health nurses each with the status of sister, one medical officer who attends the child welfare clinic once a week, one midwife and four field assistants who apart from their routine duties visit the children in their homes.

The health centre provides day care for any motherless child who is usually being reared by the paternal grandmother. The routine medical care and the health education talks (Figs. 7 and 8) follow the same pattern as detailed for St. Joseph's Home, Ibadan. The League is supported by other voluntary organizations and by individual donations.

FIG. 7. ROUTINE MEDICAL EXAMINATION BY A MEDICAL OFFICER



FIG. 8. HEALTH EDUCATION TALKS BY A HEALTH SISTER



4. The Save the Children Fund, Ilesha

The Save the Children Fund is an international charitable organization founded in 1919 by a European lady, Miss Eglantyne Jobb, to help the orphans of the First World War in Europe. In 1963, the organization came to Nigeria at the request of Dr. David Morley, the then paediatrician at Wesley Guild Hospital, Ilesha. He recognised at first hand the need for a child-care health visiting service to follow-up patients discharged from the hospital and later obtained financial aid from the Save the Children Fund organization in London.

A motherless child can come under their supervision provided there is a relative at home willing to care for the child. Apart from the administrative staff, the other members include two health visitors and four mid-wives who advise the relatives on child-care, hygiene, nutrition and feeding problems. Home visiting is carried out in Ilesha town and in 60 villages within 25 miles radius. About 1,200 children in need of care are seen every week, including about 25 motherless babies usually

referred from Wesley Guild Hospital, Ilesha. Cookery demonstrations are held to demonstrate to mothers the correct way of using readily available cheap nutritious local food stuffs. In bad cases of malnutrition, free milk and beans are given as dietary supplements.

The Save the Children Fund, an organization which is supported entirely by voluntary contributions abroad is carrying out immunisation campaigns in all the villages against smallpox, poliomyelitis, tuberculosis, whooping cough, diphtheria and tetanus.

PART TWO - THE PRESENT STUDY

CHAPTER III - OUTLINE OF THE STUDY

CHAPTER IV - RETROSPECTIVE AND PROSPECTIVE STUDIES

(1) Motherless babies in institutions
and foster homes.

(ii) Morbidity and mortality in
motherless babies.

CHAPTER V - TRANSVERSE STUDY - Physical
development.

CHAPTER VI - TRANSVERSE STUDY - Psychological
assessment.

CHAPTER VII - TRANSVERSE STUDY - Socio-economic
background.

CHAPTER VIII - COMMUNITY OPINION SURVEYS -
Motherless babies and the
community.

CHAPTER III

THE PRESENT STUDY

OUTLINE OF THE STUDY

The study was undertaken to define the problems involved in the care of motherless babies in the Western State and also to evaluate the present methods of caring for these children, particularly with regard to their physical, mental and social development. From the findings, recommendations are suggested for a suitable programme of supervision and care that would be feasible in terms of the socio-economic and cultural factors in Nigeria.

SOURCES OF MATERIAL

As already mentioned, there is no existing register of motherless babies. Those under the supervision of the government, religious and voluntary organizations only represent some of such children in the community. The study included children drawn from all these recognised agencies and from other sources such as hospitals and also those found through information received from persons in the community. Children in an institution in Lagos, the Federal capital, which has better medical and social

facilities than any other town in the Western State were also included.

Visits were paid to numerous individuals and agencies and to many of the children. Close contact was established with the various organizations and personal attendance made at many of their committee meetings where the care of these children could be discussed.

Information was sought from the different agencies and individuals connected with the child on the cause of separation from the mother, the father's occupation and the degree of contact maintained by the family with any child in care and on the cost there. Because of the comparatively small number found, all motherless children under five years of age were included in the survey.

Two control groups consisting of children with both parents alive were studied, one group in Ilora as representing a rural community, the other in Ibadan as representing an urban community. The children in both these groups were drawn from those regularly attending child welfare clinics. Every fourth child seen at two of the clinics in Ibadan and the clinic in Ilora was included.

CLASSIFICATION OF THE CHILDREN

In all, 227 motherless babies and 140 with both parents alive were studied. All were drawn from the same social strata. The age distribution is shown in Table 25a. The motherless babies were divided into three broad groups according to the type of care.

1. Motherless babies in institutions.
2. Motherless babies in foster homes.
3. Motherless babies living with their families.

The composition of the three groups and of the control groups was as follows:

1. Motherless babies in institutions

Three sub-groups comprising 110 children were examined - 53 children in Ibadan Home (IBHM)[#], 30 children in Lagos Home (LHM)[#] and 27 children in Kersey Home (KH)[#]. All these children were of similar social background and had been in their respective institutions for at least two months.

2. Motherless babies in foster homes

30 children who had been placed in foster

Details of abbreviations of the various subgroups of motherless babies and children in the control groups are shown in Table 25b.

homes since separation from their mother (IPC)²⁵ were examined and visited in these homes.

3. Motherless babies living with their families

This group comprised 87 children divided into three sub-groups. The first consisted of 20 motherless babies in Ilesha cared for by relatives under the supervision of the Save the Children Fund (SCF)²⁶. The second comprised 30 motherless babies living with relatives and under the supervision of the staff of Ilora Health Centre (ILHC)²⁷ and the third, 37 motherless babies in Ibadan (MBLWR)²⁸ who had always lived with their relatives but who had not received any supervision.

Control groups

All the 140 children in the two control groups - 80 from Ibadan (IBCG)²⁹ and 60 from Ilora (ILHC)³⁰ respectively - had both parents living.

RECORDING OF DATA

For each child included in the study, a detailed

questionnaire was drawn up and completed by the writer (copy in Appendix C). A continuation form was also devised to record the child's progress at follow-up visits in the prospective study (copy in Appendix D). Supplementary observations were recorded as necessary and on completion of the survey the findings were analysed.

NATURE OF STUDY

The survey included retrospective, transverse and prospective studies and community opinion surveys.

Retrospective Study

This entailed examination of any morbidity and mortality data available from the various agencies concerned with motherless babies.

Transverse Study

With the exception of three children in Ibadan Home who were not available at the time, a complete physical examination was undertaken of each child in the study and in the control groups with special reference to height and weight and liver and spleen enlargements. Psychological assessment and blood examination were undertaken for about 90% of the

motherless babies and for 50% in the control groups. In addition, simple routine examinations of urine and stool specimens were carried out on approximately 84% of children in the survey and 50% in the control groups.

Prospective study

71% of motherless babies in Ibadan and all the motherless babies in Ilora were subsequently followed up for twelve to eighteen months and examined monthly with particular reference to their morbidity experience and any gain or loss of weight.

Community opinion surveys

Opinion surveys were conducted in two areas, Ibadan and Ilora. 560 married persons, 300 in Ibadan and 260 in Ilora were interviewed and their responses recorded on a self devised questionnaire (copy in Appendix E). The respondents were asked their opinion on the publicity of the different methods of care and for their attitude to the problems involved.

CHAPTER IV

RETROSPECTIVE AND PROSPECTIVE STUDIES

(1) MOTHERLESS BABIES IN INSTITUTIONS AND FOSTER HOMES

Introduction

To appreciate the problems involved in their care, a detailed study of three of the homes, two in the Western State (Ibadan Home for Motherless Babies, Ibadan, and Kersey Children's Home, Ogbomosho) was made with special reference to their physical environment and their standard of care. The two other homes, the Catholic Mission Orphanage in Ado-Ekiti and St. Joseph's Home in Ibadan have not been considered in detail as the former had only five children and the latter was primarily a day care centre.

MOTHERLESS BABIES IN INSTITUTIONS

Ibadan Home for Motherless Babies, Ibadan

Physical Environment:

This is a modern building (Fig. 9) situated in beautifully kept grounds in the newer residential area of Ibadan and isolated from neighbouring dwellings by surrounding hills although the quiet



FIG. 10. AN ASSISTANT FEEDING MOTHERLESS BABIES
IN IBADAN HOME



atmosphere as one approaches the home is marred by the sound of a continuously blaring radio. The home takes about 35 children and has four large rooms, one each for children under six months, for six to twelve months, for toddlers up to two years and for those of two years and over. In addition, there is an isolation room in a different wing. The rooms are well lit and adequately ventilated. There is a municipal water supply and a modern sewage disposal system.

Standard of Care:

The staff of the home comprises the matron who is a trained midwife, and fifteen 'nurses' none of whom has any specific training in the developmental needs of infants and young children although required to have had a secondary modern education. They are responsible for the care of the children including bathing, feeding, and clothing and as these duties are shared among the assistant staff on a shift basis, a child during twenty-four hours may be cared for by ten or more persons.

Infant feeds are prepared by a different nurse each week and are given in previously sterilised

bottles. Because of shortage of staff, the infants are often self fed in their cots with the bottles supported on pillows. The older children in the home are fed three times a day. To save time, an assistant feeds four to five children at once (Fig. 10) and in consequence, the children are not encouraged to feed themselves.

From as early an age as two months the babies are put out of doors in play-pens. In each play-pen, usually three or four children lie on their backs unattended by any adult but as they learn to sit up they are allowed to play outside the play-pen. The indoor playroom, which also serves as the dining room for older children, is usually crowded with toddlers as they are not allowed out in the gardens. The infants are thus restricted from attempting or developing locomotory skills such as crawling. The toys which include simple rattles, balls, dolls and animals are few and not varied for the different age groups.

There is no medical officer in charge of Ibadan Home but two visiting doctors provide medical

supervision and care. The children are given multivitamin syrup daily and weekly anti-malarial prophylaxis. They are weighed weekly and the individual weight recorded in the child's case sheet. Minor ailments are treated by the staff of the home and emergencies are referred to University College Hospital, Ibadan. Most cases of gastroenteritis are treated symptomatically without laboratory investigation.

Lagos Home for Motherless Babies

Physical environment:

Lagos Home for Motherless Babies is an old wooden building situated in Marina Street, one of the busiest streets in Lagos. The home caters for about forty children who are housed in four large rooms according to their age groups - the under six months, the six to twelve months, the toddlers, and those two years and over. The rooms are well lit and adequately ventilated and the environmental hygiene and sanitation are satisfactory.

Standard of Care:

Apart from the administrative staff, there are

the matron, who is a State Registered nurse, six midwives, a 'catering officer' who underwent a modified form of training abroad and a social worker who has no formal training but is familiar with home conditions in Lagos.

In addition, there are nine assistants who have no professional training of any type but are given some in-service training in the management of these children. Besides the regular staff, wives of diplomats resident in Lagos and other persons from Nigeria and overseas help in the home for varying periods. The assistants work in shifts and their duties are shared. The feeding arrangements which are similar to those in Ibadan Home are better supervised and the children are fed individually, lifted and cuddled oftener and spoken to more regularly. There is a variety of suitable toys for each age group and the children are encouraged to play in the garden.

There is no medical officer in charge but some doctors and dentists who are members of the sponsoring organization provide a degree of medical

supervision. The routine medical care follows the same pattern as described for Ibadan Home but in addition there is an official car to convey the children on outdoor excursions and visits to hospital.

Kersey Children's Home, Ogbomosho

Physical environment:

Kersey Children's Home is an old and modest building in Ogbomosho situated in rural surroundings on the out-skirts of the town. The home cares for about twenty-five children and has four large rooms which are adequately lit and well ventilated. Unlike the other two homes which have a municipal water supply, Kersey Home uses rain water for domestic purposes.

Standard of Care:

The home is run by a matron who is a state registered nurse, and twelve assistants who as in the other two homes have a poor educational background and no previous training. The feeding, play and recreation arrangements are similar to those described for Lagos Home. Routine medical

care and supervision are provided by the matron and emergency cases are referred to the Baptist Mission Hospital in Ogbomosho.

MOTHERLESS BABIES IN FOSTER HOMES

Although no detailed survey of individual foster homes was undertaken, the following impressions were gained from personal visits to each one of them.

Physical environment:

Most foster homes are situated in the crowded part of the city in the transitional area between the old and the new Ibadan. The surroundings are unattractive and littered with refuse which attract flies. The homes are invariably overcrowded, small, poorly lit and ill-ventilated (Fig. 11). Drinking water is obtained from a common tap erected in the area and faeces are disposed of in pit or bucket latrines.

Standard of Care:

Sixteen foster parents out of the eighteen resident in Ibadan care for thirty children and the number of children boarded out to each varies from one to four (Table 26). The feeding of the

Fig. 11. A TYPICAL FOSTER HOME - IBADAN



children under the care of St. Joseph's Home is supervised at the day-care centre but that of the others is unsupervised.

The infants are left too long on their backs and the older children who can move around within the precincts of the homes are hardly ever seen with toys. A few of the foster parents who do not go out to work find time to play and cuddle the children.

The health of the child is the responsibility of the foster parent. No routine periodic medical examination is carried out but good foster parents regularly take the children to the child welfare clinics for routine medical supervision and immunizations.

Work and service conditions of nursing staff and foster parents

In the institutions, most of the staff are young women between 18 to 25 years, employed full-time and from half to four-fifths are married (Table 27). Those in Lagos and Ibadan homes live out but it is compulsory for the 'nurses' to live in at Kersey Home. All staff work an eight-hour six-day week with fourteen days annual leave for those in Lagos and Kersey Homes, and seven days

for those in Ibadan Home. The starting point on the salary scale for the untrained staff in Ibadan and Lagos Homes is £5 per month and that of Kersey Home is £7.10s. per month. There is an annual increment of 10s. for Ibadan and Kersey Homes but none for Lagos Home. These salaries when compared with those of other workers in the Western State (Table 28) are average salaries but would be considered very poor by Western standards.

Turn-over of staff is high in Ibadan Home. Of 16 employed in 1970, three were sacked and five resigned. Staffturn-over is low in Kersey and Lagos Homes (Table 27).

The foster parents are mostly middle-aged women gainfully employed outside their own homes. Fourteen out of the sixteen foster parents are married; four live with their husbands and the remainder are either separated, divorced or widowed. (Table 26). The foster parent is paid £3 monthly for each child in care but there is no extra allowance for clothes.

Summary

In the institutions, nutrition environmental hygiene and sanitation are satisfactory but in the foster homes, these are defective. The staffs in each of the institutions are mostly untrained, the proportion of untrained staff being lowest in Lagos Home. More individual attention and social stimulation are provided for children in Kersey and Lagos Homes than for those in Ibadan Home and in the foster homes. The medical coverage in both institutions and foster homes is inadequate.

The conditions of service in institutions and foster homes are substandard and result in high staff turn-over in the former and presumably deficiency in the quality of care in the latter.

(11) MORBIDITY AND MORTALITY IN MOTHERLESS BABIES

Introduction

The annual reports of hospitals and health centres in the Western State although at times inaccurate and incomplete nevertheless indicate the magnitude of the problems encountered in medical practice. Such reports are however not available for the motherless babies institutions although these have been in operation for a varying number of years. There is no record of how many of the children admitted die or are discharged or of what happens in later years to those discharged. The morbidity experience of such children would be of considerable interest. Accurate data on all these aspects are urgently needed for those engaged in child care work.

This chapter is therefore concerned with retrospective and prospective studies of motherless babies in their different environments which were undertaken by the author in the hope that the findings might indicate areas where changes in policy and standards of child care could be beneficial to those concerned.

A. RETROSPECTIVE STUDY

Collection of data and results

Personal visits were made to the institutions and voluntary organizations to collect information from any available medical records of these children. The period of care covered in the different institutions ranged from one to ten years.

In all the institutions the medical records were scanty and non-uniform and unstandardized and often omitted vital information about the children. Acute shortage of professional staff obviously affected the completeness and quality of the records. The limitations of the data obtained are recognised, but broad analysis and cautious interpretation indicated gross findings on the morbidity and mortality patterns in these children. These considered included:-

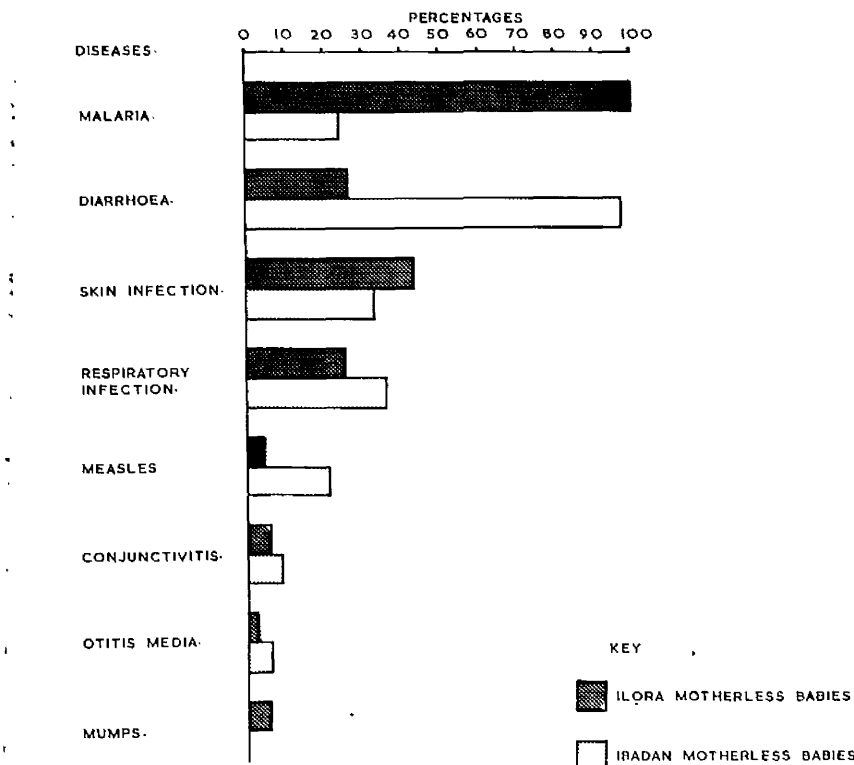
1. Morbidity patterns of Ibadan Home and Ilora motherless babies
2. Comparative mortality experience of motherless babies in the Catholic Mission Orphanage, Ibadan Home, St. Joseph's Home, Kersey Children's Home, Lagos Home and Ilora

3. Mortality by age
4. Mortality by cause
1. Morbidity patterns of Ibadan Home and Ilora motherless babies

The morbidity patterns of Ibadan Home and Ilora motherless babies are shown in Fig. 12. the diagnosis being based on history and clinical examination.

• FIG. 12

TABLE SHOWING PERCENTAGE OF CHILDREN IN EACH GROUP WHO HAVE AT ONE TIME CONSULTED THE DOCTOR WITH THE VARIOUS ILLNESSES BETWEEN SEPT 1968 TO SEPT 1969.



The percentages of children with the illness specified were those who at one time during the period September 1968

to September 1969 were found on examination to have the illnesses. The number of children already resident in or admitted to Ibadan Home during this period was sixty-four and the number in Ilora forty-four.

The major cause of morbidity among the Ilora babies was malaria which involved 100% of the children as compared with only 25% in the Ibadan Home. 97% of motherless babies in Ibadan and 27% in Ilora had diarrhoea. The incidence of skin and respiratory infections and measles was not uncommon in both groups and their causation is worthy of comment.

It is customary for Nigerian children to sleep together at night side by side on a mat spread on the floor of a poorly ventilated room. Such close physical contact can facilitate skin infection being transferred from an infected person. Apart from this, in a rural community such as Ilora the standard of hygiene is generally poor and many of the children are not bathed regularly. Filth coupled with mosquito bites may cause the child to scratch and thus introduce infection into the skin.

In children in the Ibadan Home, skin infections may be due to frequent handling by different people. It

was also not uncommon for these children to be bathed in the same bowl of water whenever there was a shortage of the municipal water supply and under these circumstances, skin infections were likely to spread.

The findings also indicate that there were more cases of respiratory infection in children in Ibadan Home than in Ilora. Frequent colds were a common occurrence in Ibadan. Home and Spitz (1946) and Bakwin (1949) described this feature in children who had been institutionalized for varying periods of time. Such upper respiratory attacks if not treated may lead to lower respiratory infection.

In the case of the Ilora motherless babies, overcrowding, poor ventilation and lowered resistance due to inadequate nutrition would result in respiratory infection. Another factor to be considered was that of "forced hand feeding" which is still largely common in the Western State of Nigeria. This method of infant feeding as practised among the uneducated Lagosians has been described by Whitebourne (1930) and is quoted here in full.

"An infant is held in the mother's lap with its head thrown back. The mother's right hand is hollowed to form a cup containing the water; the back of the hand is pressed firmly against the nostrils and the fluid poured into the mouth is swallowed amidst gasps and screams."

During the procedure, choking always occurs and food may pass into the respiratory tract. The possibility of this resulting in bronchopneumonia has been stressed by Smith (1943). It is not unlikely that some of the motherless babies in Ilora might be fed in this way in spite of the health talks given at the Ilora Health Centre.

20% of children in Ibadan Home had measles but only 5% of those in Ilora. Measles is a common disease of childhood and especially severe amongst mal-nourished children of the developing countries (Ogbeide, 1966). Although there is currently a world-wide campaign for measles vaccination, most child-welfare clinics in the Western State do not perform routine vaccination. The motherless babies in Ibadan and Ilora had had no vaccination against measles and on account of its high infectivity, it is not surprising that its occurrence in Ibadan Home took the form of an epidemic whereas it only occurred sporadically among the Ilora motherless babies since they lived in separate homes.

Other diseases such as conjunctivitis, otitis media and mumps were also reported but these had a low incidence.

2. Comparative mortality experience of motherless babies in Catholic Mission Orphanage, Ibadan Home, St. Joseph's Home, Kersey Children's Home, Lagos Home and Ilora.

The death rates shown in Table 29 are based on the ratio between the total number of children cared for and the deaths reported over periods which varied from eighteen months to ten years. The Catholic Mission Orphanage had the highest mortality of 68%, approximately three times that of Lagos, Kersey Children's and St. Joseph's Homes with 20%, 21%, 26% respectively and about five times as much as that of Ilora motherless babies with 13%. Ibadan Home had a mortality of 38%.

3. Mortality by age

Analysis of deaths by age is shown in Table 30. Deaths among the Ilora motherless babies were spread over all the age groups with the peak incidence between one to two years. Deaths among motherless babies in the institutions were chiefly in those under two years of age, with the highest mortality in the first three months of life. The age mortality record of children in St. Joseph's Home was incomplete and has not been included in Table 30.

4. Mortality by cause

Analysis of deaths by cause in the various groups

is presented in Table 31. The major cause of death was diarrhoea which accounted for 20% to 100% of deaths in some groups. Other important causes of death were pneumonia, measles and prematurity.

Summary

The findings in the retrospective study indicate that the medical records in institutions were incomplete and inaccurate and that any information available must be interpreted with caution. Diseases such as gastroenteritis, malaria, pneumonia, measles and skin infections were common occurrences among motherless babies in institutions and in family homes but by far the commonest cause of morbidity and mortality in institutions is diarrhoea.

An ordinary child is protected for the first six months of life against gastroenteritis since most infants are still entirely breast-fed during this period. With a motherless child, the situation is different. From the first few days of life, the infant is exposed to infection from milk feeds which may be contaminated and the standard of child care is usually low being administered by untrained and inexperienced persons. It is therefore suggested that poor standards of child care and contaminated feeds account

for the high death rate found in the first three months of life.

The mortality from all causes ranged from 13% to 68% and with the exception of Ilora motherless babies, more than 60% of deaths in each institution occurred in the first three months of life. Other findings from the retrospective study are discussed in detail in the following chapter.

B. PROSPECTIVE STUDY

Materials and Methods

A total of 110 motherless babies, 81 from Ibadan and 29 from Ilora were included in this study. The Ibadan group consisted of 30 motherless babies from Ibadan Home, 27 living with families, and 24 in foster homes. These 110 children were subsequently followed up from October 1969 to March 1971 and examined monthly with particular reference to weight change and morbidity experience. Visits were paid to their homes and any relevant information regarding their state of health and general welfare obtained from the matron of the home and from relatives.

Results

It was impossible to follow up regularly many of the motherless babies because of the dual nature of residence of their relatives who spent part of the year on the farms and the remainder in the towns. 14 of the 30 motherless babies in Ibadan Home were discharged home during the period and as half of these left for distant places, they were lost to the study. Moreover, illnesses were under-reported by foster parents and relatives and could only be regularly recorded for the children in Ibadan Home. Because of these difficulties, most of the data gathered is descriptive in nature.

The following three case histories illustrate the physical, social and mental problems encountered in these children as does an account of an epidemic in one of the homes. Finally the mortality experience of the individual groups together with a detailed analysis of deaths in Ibadan Home are considered.

(1) CASE HISTORIES

Case 1

Sakiatu, a six month old female child was referred to the Oluyoro Day-Care Centre from the

University College Hospital on the death of her mother from cervical cancer. Her father and two older siblings were at this time receiving treatment for tuberculosis of the lungs.

Because of the family's medical history, it was decided that the child should be fostered out. Her prospective foster mother was a middle-aged woman, a divorcee, whose main income was derived from fostering. She lived in a two roomed apartment with three other foster home children who were all under five years. On placement into the foster home at the age of six months, Sakiatu weighed 11 lbs 12 ozs. At nine months, she had diarrhoea which responded quickly to treatment, but there was very little progress in her development. She lay motionless on the bed most of the time and was unresponsive to the approach of anyone. At 15 months, she could not crawl or speak. The weight remained constant even after the foster mother was given an extra supply of dried milk, eggs and cereals which she claimed the child ate very well. Extensive medical investigation revealed no organic pathology for the failure to thrive.

At this point it was decided to have the child transferred to another foster mother who had the reputation of being more understanding, honest in her intentions and who cuddled and caressed the children under her charge more than any other foster mother. Whenever she could, she carried the child on her back. Within a month of the child's stay with the new 'substitute' mother, she became more alert and grew more responsive to people, especially her foster mother. She started to crawl and was standing holding on to things.

In that month, she gained 1 lb and continued to make a steady progress. The weight curve is shown in Fig. 13. below.

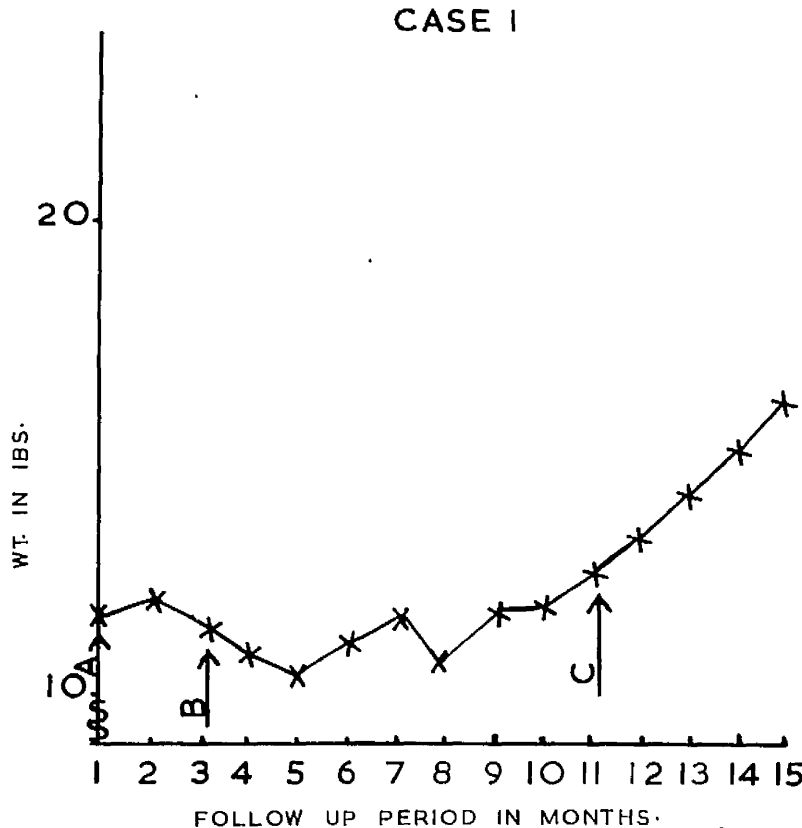


Fig. 13

A = PLACEMENT WITH FOSTER PARENT.

B = DIARRHOEA AND BOILS.

C = CHANGE OF FOSTER PARENT.

This case history illustrates a foster mother who failed to give the emotional care and individual attention the child needed and that remarkable progress was made with a new and more responsive foster mother.

Case 2

Funlayo was one day old when her mother died and had apparently been abandoned in Ibadan Home by her relatives when a few days old. She was then placed in a foster home. The foster mother was a pleasant lady, a graduate and mother of an 11 year old boy. Being unmarried, her devotion to the two children was undivided. Since nothing was heard of the relatives, she had come to regard Funlayo as her own child and became obsessed with her. The child made steady progress gaining about 1 lb in weight per month. She was alert, intelligent and cheerful. Friends remarked on the resemblance of the child to the foster mother! When the child was about 2½ years and progressing satisfactorily, her father turned up at the foster home and expressed his wish to take his daughter home. The foster mother became emotionally upset and very depressed, refusing to give the child away. Although she continued to take good care of the child, she did this under emotional strain and anxiety.

This case history demonstrates the risk of rearing a child as one's own without any legal support as provided in the British Adoption Laws which are not in force in Nigeria.

Case 3

Basiru, a one day old child, was admitted into Ibadan Home when his mother died of post partum haemorrhage. The father was a poor farmer who had five other dependants, another wife and four children. The child

had spent all his life in the institution and at the time of the study was 3 years 10 months old and weighed 33 lbs 7 ozs. Although his physical appearance was good, a striking feature was the dull placid look which he always wore. He played a lot by himself and his choice of toys were rattles, dolls, balls and animals. He obeyed simple commands but could not talk. He was the oldest in the home and his play-mates were mostly children learning to crawl or walk. Although he had been walking for about two years, he suddenly started to crawl at 3 years 11 months. At this point the home committee felt the child should be sent to a day-nursery rather than to his natural home which was regarded as unsuitable because of the poor home background. He had stayed only three days in the nursery when the head-mistress asked for him to be removed as he was upsetting other children with his incessant crying. He refused to mix with his play group and looked forward to returning to Ibadan Home. In the following month and at about the age of 4 years, he was discharged home. His father who had not visited the institution or seen the child in the past two years was quite unprepared for his arrival but the step-mother seemed pleased. There was no further action taken by the committee of the home as children were never followed up after discharge. Subsequent visits in the course of the survey showed that the child was adjusting well. Within three months, he had a vocabulary of about six words; he was alert, friendly and always ran up to strangers and took them by the hand. The step-mother grew very fond of him and took him out many times. He mixed freely with other children in the neighbourhood and became very popular.

His physical development was however not so encouraging. Within a month's stay at home, he had frequent episodes of diarrhoea and lost

2 lbs in weight. Although he maintained a good appetite, his weight remained constant with very little change in the following eight months. (Fig. 14), below.

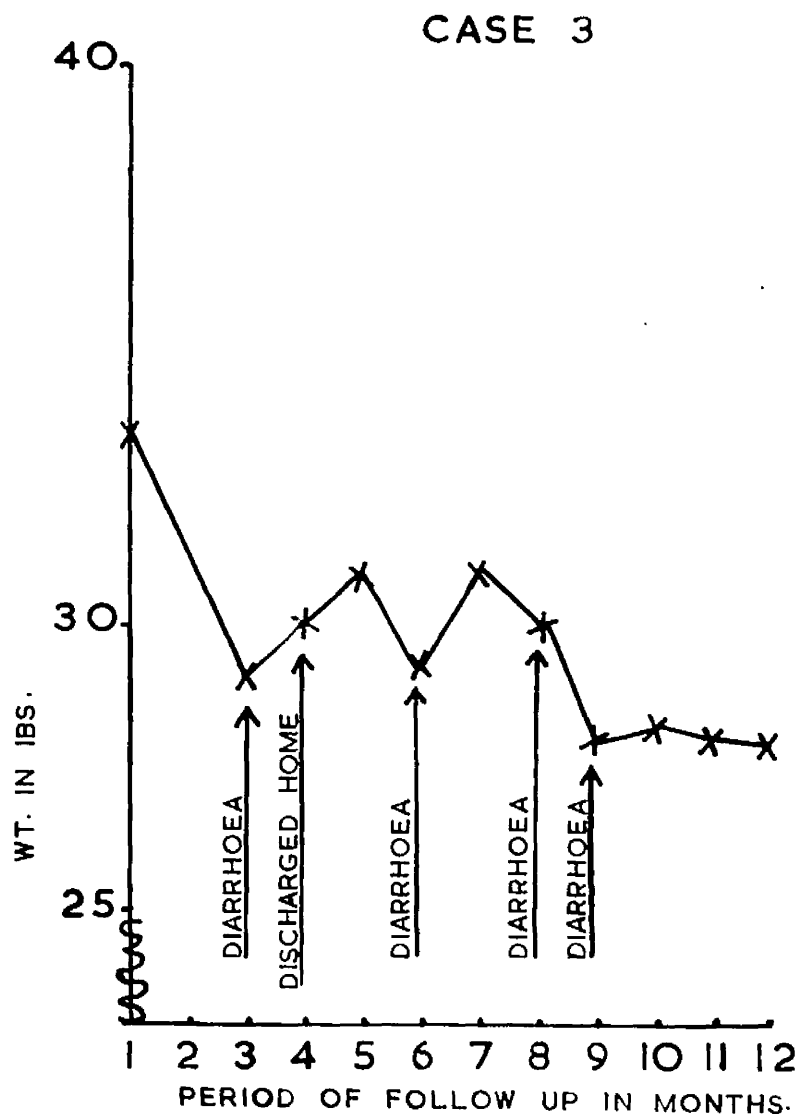


Fig. 14

This case history illustrates the importance of a right environment for both physical and mental growth, and describes a child who had spent all his life in an institution and in whom physical development was normal but mental development

retarded. Whilst in Ibadan Home, his behaviour was seen to revert to that of an infant and he found it difficult to form any relationship or communication with children of his age group. With a good home environment and a loving step-mother, a marked improvement in his social and mental development occurred although his physical progress suffered a set back probably because of inadequate hygiene and malnutrition.

An account of an epidemic in a children's home.

MORBIDITY PATTERN AS SEEN IN IBADAN HOME
MOTHERLESS BABIES BETWEEN
OCT. 1969 TO SEPT. 1970.

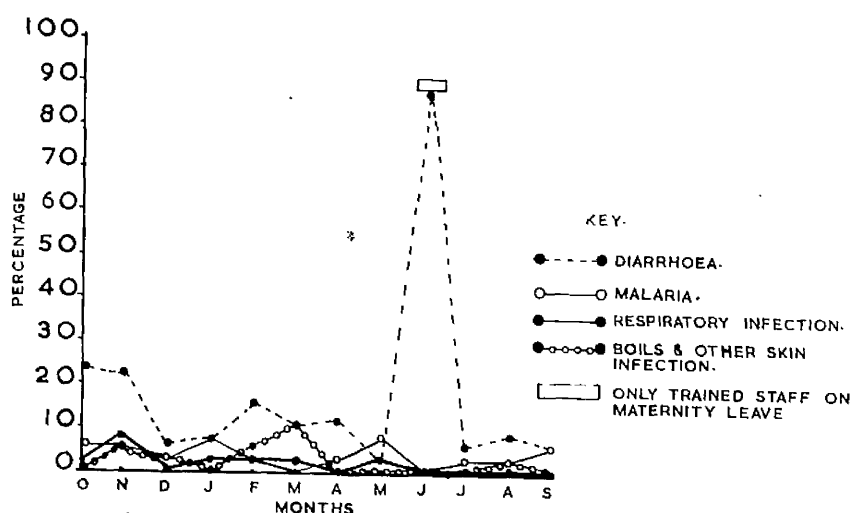


Fig. 15

(DIAGNOSIS BASED ON HISTORY AND CLINICAL EXAMINATION ONLY) THE NUMBER
 AFFECTED IN EACH MONTH HAS BEEN EXPRESSED AS % OF THE NUMBER AT
 RISK DURING THE MONTH.

Figure 15 shows graphically the morbidity pattern of children in Ibadan Home during the follow up period. Diagnosis was based on history and clinical examination. Cases of diarrhoea were reported all the year round; malaria, respiratory and skin infections and measles also occurred. The severity of the illnesses was

usually assessed by the matron and the visiting doctor was consulted in the serious cases. At the end of May 1970, the matron of the home went on maternity leave and the care of the children was left to the untrained staff. A week after the matron left, two children had diarrhoea which soon spread to involve 28 out of the 32 in the home. Specialist medical opinion was sought and stool specimens then collected from the affected children and the 'nurses'. In the second week of the epidemic, six children died, three of them on the same day. A State Registered nurse was engaged and immediately introduced measures which brought the epidemic under control. The results of stool examinations proved negative for all the children although one of the 'nurses' was found to have a salmonella infection.

The morbidity experience of the children demonstrates the importance of having trained experienced people in infant institutions and the necessity of periodical stool examination of all those working in close contact with the children.

Mortality experience among groups of motherless babies

The number of deaths in Ibadan Home were recorded in children admitted during the follow up period and the mortality rate based on the ratio between the numbers of admissions and deaths. The rates of other groups were based on the ratio between the number followed up and the number of deaths. The results are shown in Table 32.

Ibadan Home had the highest mortality rate of 30%, ten times as high as that of Ilora motherless babies and of motherless babies living with relatives. In all but the group of motherless babies living with relatives the deaths occurred in infants under two years.

A more detailed analysis of deaths in Ibadan Home was made in relation to the length of stay in the home, and the age and cause of death of the child. (Tables 33, 34 and 35).

Table 33 gives an analysis of deaths in relation to length of stay in the home. Of the 60 infants admitted at various ages under one year, 10 out of 18 deaths occurred during the first three months of residence and 5 before completing the second three months. No deaths occurred after the third quarter.

Table 34 analyses deaths by age. The 18 deaths were in infants under eighteen months, 10 deaths occurring in infants under three months.

Table 35 shows that the commonest cause of death was diarrhoea which accounted for 11 of the 18 deaths. Other causes were respiratory infections and marasmus and three deaths were from undetermined causes.

Summary

The prospective study has highlighted a few of the physical, social and mental problems encountered by motherless babies in their different environmental settings. The institutional child may have a normal physical development but becomes mentally retarded because of lack of social stimulation and individual attention. On the other hand, a motherless baby reared in an environment with poor sanitation and whose diet is inadequate may have poor physical but normal mental development. The study also showed that a child can have normal mental, social and physical development provided the right choice of foster parent is made.

As demonstrated by the epidemic described in this study, the course of a disease can be explosive in an institutional setting. This can be related to the quality of staff who have no knowledge or training in the causes and modes of transmission of disease.

As shown in the retrospective study, the findings in the prospective study also indicate that mortality experience is greatest among institutional children

and the peak incidence is in infants up to 3 months of age. Diarrhoea from gastroenteritis is the most important cause of death and reflects the importance of maintaining a high level of hygiene in institutions caring for motherless babies.

CHAPTER VTRANSVERSE STUDYPHYSICAL DEVELOPMENT(1) Material and MethodsIntroduction

Inadequacy of growth in children is a common problem presenting to the practising physician. Many causes are responsible, but the growth studies by Matthews (1955) and Watt (1959) have shown that in Nigeria the practice of breast feeding by mothers affords some protection against infection and malnutrition during the first year of life. It thus appears that the growth of babies deprived of breast feeding might be retarded. In addition to this, other factors which could affect the development of motherless babies were assessed by means of a transverse study.

Composition of the transverse study

224 children were examined, 107 from three institutions, 30 from foster homes and 87 children living with their families; in addition two control groups comprising

140 children were also examined. All the children were from the same social strata and were in the 2 months to 5 year age group. The age distribution and the number of children examined in each of the three study groups and the two control groups are detailed in Table 36. The ages of most were obtained from their records, except in the case of abandoned children where ages were uncertain and for these, ages were assessed by their general appearance and teeth eruption.

Method of sampling and examination

Every known motherless child aged between two months and five years was included and for the controls, every fourth child in the same age range attending welfare clinics in two centres were included.

In all children a detailed physical examination was carried out which included:

1. Measurement of height and weight.
2. Assessment by palpation of any enlargement of liver and spleen.
3. Haematological examination - genotype, packed cell volume and blood films for malaria parasites.
4. Urine examination for blood, sugar and pus cells.

5. Stool examination for protozoal cysts and helminthic ova.

Each child was examined for signs of malnutrition, particular attention being paid to the state of hair, skin, lips and teeth and for any evidence of rickets. Abdominal size and any enlargement of liver and spleen were recorded. The cardiovascular, central nervous and genito-urinary systems were examined.

1. Measurements of height and weight

- (a) Height

One of two measurements, recumbent length or standing height was taken.

- (1) Recumbent length (Crown-heel)

This was recorded for babies up to two years. The child was placed supine on the measuring table, the head held firmly in position against the fixed head board by an assistant and the legs straightened with the feet at right angles to them. The free foot board was brought into firm contact with the child's heels and the reading, taken on scales set into the measuring table, was recorded to the nearest 0.25 inch.

(ii) Standing height

The older child was encouraged to stand with his bare heels firmly on the ground and heels, buttocks, and dorsal region were brought into contact with the vertical limb of a firm wooden heights scale. The head was positioned so that the child looked directly forward and the horizontal head piece was then brought down sufficiently firm over the crown of the head to compress the hair. Measurements were recorded to the nearest 0.25 inch.

(b) Weight

Standard baby scales were used for the infants and younger children and bathroom scales for older children who could not stand. The accuracy of the scales was repeatedly checked by the use of standard weights. The nude weight was taken and recorded to the nearest 0.25 lbs.

2. Assessment of enlargement of liver and spleen

With the child lying flat on her back, the abdomen was palpated. The liver and spleen were recorded as enlarged if their edges were felt on palpation.

3. Haematological examinations

- (a) Packed cell volume: Haematocrit tubes (Hawksley and Sons Ltd.) containing a trace of dried heparin were used to collect blood from the finger tips and were then sealed at one end, centrifuged in a high speed haematocrit centrifuge, and the resultant column of packed cells read.
- (b) Haemoglobin genotypes were ascertained using the standard technique. The plasma free packed cells were washed in physiological saline and lysed with saponin to release the contained haemoglobin. The resultant solution was then poured on strips which were dipped in Barbitone buffer at PH 8.6, then placed in an electrophoresis tank for 18 hours and finally removed and dried in a hot air oven at 60°C. The various haemoglobin patterns were recorded.
- (c) Blood films for malaria parasites
- Thin and thick blood films on clean glass slides made from finger prick samples were

stained with Giemsa solution for 20 minutes. The thin films were examined for malaria parasites and the thick films for identification of the particular species.

4. Urine examination

A simple examination of a fresh specimen of urine was carried out. 'Diamecanbistix' strips were dipped in the urine and changes in colour for protein, sugar and blood observed. A drop of uncentrifuged urine placed on a clean slide was then examined microscopically under the high power objective for blood and pus cells.

5. Stool examination

A fresh specimen of stool was collected from each child in a container and macroscopic and microscopic examination for protozoal cysts and helminthic ova performed. To identify the specific protozoal cysts, a loopful of faeces was mixed with saline and iodine and examined microscopically.

PHYSICAL DEVELOPMENT(ii) ResultsGeneral physical examination

Table 37 shows the various physical signs found on general examination of each group. 4 cases of marasmus, 1 in IFC and 3 in KCH, were revealed. The incidence of protuberant abdomens - "pot bellies" - was found to be high in Ibadan Home (Fig. 16a). Dental caries was not found in the institutional children but was not uncommon in SCF, ILMB and MBLMR. Apart from one child with angular stomatitis and bow legs, no case suggestive of avitaminosis was found. On the whole, skin infections were relatively uncommon. Two interesting features, the scarification of the skin of face or other parts of the body and the wearing of charms (Fig. 16b) were found more frequently among motherless babies living with their families.

1. Heights and weights

The individual height and weight of each child were plotted against the standard height and weight percentiles derived from Morley (1968). These are recorded in Figs. 17 to 52 (Appendix G).[#] Each

[#] Appendix G contains Figs. 17 to 52.

Fig. 16a.

TWO MOTHERLESS BABIES IN IBADAN
HOME SHOWING TYPICAL POT BELLIES

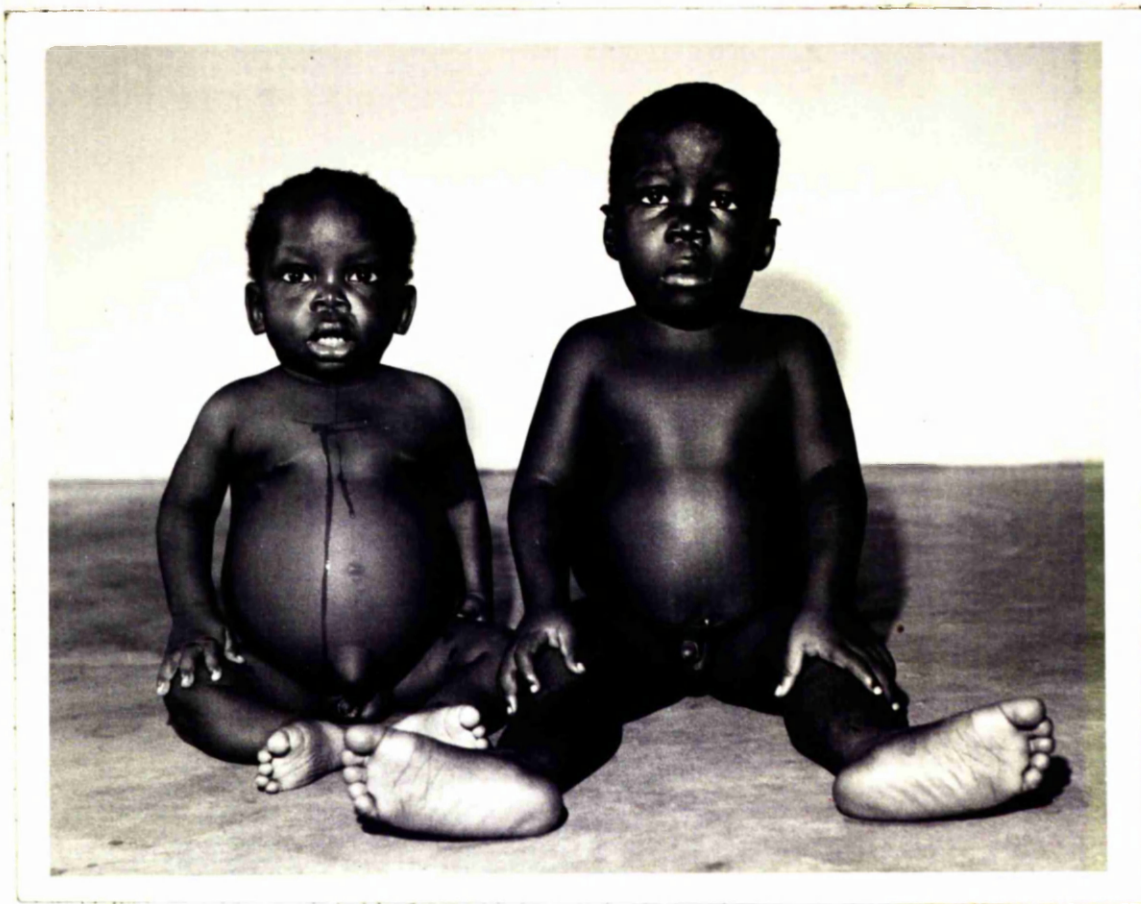


FIG. 16b. A MOTHERLESS CHILD WEARING CHARMS
ROUND THE NECK AND LOIN



dot on the height and weight chart represents the height and weight respectively of one motherless baby or of one child in the control groups. The number of dots above and below the 50th percentile were counted and statistically analysed. A Chi-square test was employed to show the significance of differences between the number of children in each group with heights and weights below the 50th percentile. The significance level necessary for rejection was taken as 0.05.

Comparison of Heights of all groups

Comparison was made of the number of children in each group including the controls whose heights were below the 50th percentile and the results are shown in Table 38. Statistical analysis reveals that the differences between the groups were highly significant.

Comparison of Heights of selected groups

The heights of selected groups were compared next. Where results in sub-groups were found not to be significantly different, the numbers have been pooled and the average used in subsequent

comparison with other groups. As seen from the detailed results in Table 38, the heights of Lagos Home motherless babies, foster home children, children living with their families and those in the control groups are not significantly different but they are significantly greater than those of Ibadan and Kersey Homes together.

Comparison of Weights of all groups

Comparison was made of the number of children in each group including the controls whose weights were below the 50th percentile and the results are shown in Table 39. Statistical analysis reveals that the differences between the groups were highly significant.

Comparison of Weights of selected groups

As with the measurements of heights, next the weights of selected groups were compared. Where subgroups were found not to be significantly different the numbers have been pooled and the average used in subsequent comparison with other groups. Table 39 gives the detailed results. The pooled weights of children in Ibadan and Lagos Homes were not significantly different from those of children in the control groups, motherless babies living with families and foster home

children respectively. The weights of children in Kersey Home were significantly lower than those of children in any of the other eight groups. Weights of those in the control groups were significantly greater than those of children living with their families or in foster homes.

2. Enlargement of liver and spleen

The percentage with liver enlargement ranged from 5% to 28% and with enlargement of the spleen from 3% to 27% (Table 40). MBLNR had the highest hepatomegaly rate and LLMB the lowest whilst the highest splenomegaly rate was found among the ILMB and the lowest in KCH.

3. Haematological examination

(1) Packed cell volume

The mean values, the standard deviation and the standard errors of the mean, of packed cell volume estimations in each group are shown in Table 41. The highest mean packed cell volume (36.9%) was found in LLMB, the lowest (30%) in IFC. A World Health Organization Study Group (W.H.O. Monograph, No. 53) considered that in children

under 4 years, anaemia existed if the PCV was below 32% (Table 42). Three groups of motherless babies in the present study, IPC, MBLWR, and ILCG fell below this level. IHMB, the group with the highest packed cell volume 36.9% was only 5% higher than the WHO standard.

(11) Distribution of Haemoglobin Genotype *

The haemoglobin genotype distribution among the groups of motherless babies and the control groups is shown in Table 43. 47% of the foster home children and approximately 60% to 80% of children in other groups had the normal homozygote AA genotype. The overall incidence of sickle cell trait was 27%. There were four children homozygous for haemoglobin S and 5 for sickle cell haemoglobin

* This is concerned with identification of haemoglobin type. The normally occurring haemoglobin type in adults is Hb-A. In addition to this one, a number of abnormal types have been described; these are haemoglobin C, D, E, G, H, I, J, K, L, M, N, O, P, Q and S (sickle cell). Sickle cell trait represents the heterozygous state for Hb-S gene, the child inheriting one gene for Hb-S from one parent, and one gene for normal haemoglobin (Hb-A) from the other parent. Sickle cell anaemia represents the homozygous state for the Hb-S gene, the child receiving one Hb-S gene from each parent both of whom show the sickle-cell trait. Both conditions, sickle-cell trait and sickle cell anaemia, are found mainly in negroes or in persons with an admixture of negro-blood.

C(SC). As expected, the incidence of haemoglobin C carriers (AC and CC) in each group was lower than the haemoglobin S carriers.

(iii) Distribution of various species of malaria parasites in blood films

The percentage distribution of malaria parasite species in the different groups of motherless babies is shown in Table 44. The 'parasite rate' denotes the percentage of positive cases found at any one time. With the exception of one child infected with *P. Ovale* and another with a mixed infection of *P. Ovale* and *P. Malariae*, all other positive slides showed *P. Falciparum*; this parasite was found in five of the nine groups. No parasites were found in blood films of children in institutions and foster homes. The 'parasite rates' of 60% in ILMB and 56% in ILCG although similar were significantly higher than the rates in the other groups.

4. Examination of Urine

The results of specimens of urine examined are shown in Table 45. Traces of blood and of albumin and occasional pus cells were found in

varying proportions in the different groups
but in only one child was a trace of glycosuria
found.

PHYSICAL DEVELOPMENT(iii) Discussion

The differences observed in heights and weights of the various groups of motherless babies are not due to one aetiological factor but to the interaction of various factors which are now discussed in their particular relation to the individual group.

1. Indigenous beliefs and cultural practices

That the relatives of motherless babies have a deep desire to protect their children against illnesses is evidenced by the high proportion of children especially among those living with their families who were found with scarifications on the skin or with charms round the neck and loins. (Fig. 16b). These traditional practices are believed to drive away the ghosts of the mothers or the evil spirits, or to appease the wraths of the gods and to give the child a chance to thrive and survive. Apart from this supernatural concept of health and disease, there are other traditional beliefs and cultural practices which may indirectly affect the

physical development of a child. For example, it is strongly believed that ascariis infestation in children is the result of eating fish and meat; similarly the belief is held that eating eggs may turn the child into a thief in later life. A practice in African population is that the head of the extended family is served first with the best part of the food and then other members of the family according to their seniority. The wives and children are served with the left over food and this type of inadequate diet may result in malnutrition and retarded growth in a growing child. Another practice already described is that of wet-nursing and although no relative gave a history of having wet-nursed any of the children, the possibility of this occurring in the motherless babies living with families cannot be totally ruled out. These indigenous beliefs and practices seem more likely to affect the physical development of motherless babies living with their families rather than of children living in institutions and foster homes who are physically separated from their families and culture.

2. Psychosomatic effect of maternal deprivation

The children in institutions and foster homes are faced with another problem, that of maternal deprivation. As pointed out by Patton and Gardner (1963), growth failure associated with the emotional effects of maternal deprivation is due not only to inadequate nutrient intake but also to the direct neurohormonal effects of the emotional illness. Bakwin (1949) described the poor physical growth in a group of children who had been separated from their mothers and kept in institutions for long periods of time. The effects of emotional deprivation would be more evident in children living in institutions than in those living within the extended family structure where the child is likely to receive better substitute mothering experience and individual attention. This effect should therefore be minimal for children in Lagos Home where the caretakers were better orientated to the psychological needs of the children and for the foster home children where the mothers are more responsive. This finding is exemplified by Case 1 in the prospective study.

Other factors which may account for the poor growth in these children were the bacterial and parasitic infections especially gastroenteritis.

3. Infections

(1) Gastroenteritis:

Although it was not possible to study the morbidity patterns in all groups, it can reasonably be assumed that as a result of the poor standard of living of most of the mothers, those children who are artificially fed from the first few days of life would have frequent episodes of gastroenteritis which over a prolonged period may lead to protein-calorie malnutrition and retarded growth. Most of the family compounds are in filthy surroundings and invariably contaminated with faecal and other waste matters which attract flies. There is a poor water supply, no refrigeration and the milk feeds are usually prepared in filthy bottles. The preparation of uncontaminated feeds in these environments is almost an impossibility. The children likely to be most affected by epidemic diarrhoea are those in institutions

and the importance of such an infection in this group lies not in its actual occurrence but in the rapidity with which it spreads to involve other children. The non-institutionalised motherless babies are usually subjected to diarrhoea on an individual basis. Children in the control groups are at a great advantage as they are breast fed and diarrhoea amongst them occurs only sporadically.

(ii) Malaria:

Apart from the nutritional consequences which may arise from vomiting, diarrhoea and anorexia from any fever, the malaria parasitaemia may have a more direct effect on protein metabolism as suggested by Macgraith (1948). Trowell (1949) has reported that malaria does not have much effect on an African infant so long as the child has natural immunity and excellent breast feeding but once this is changed to artificial feeding, mainly of carbohydrates, the malaria may be so severe as to result in undernutrition. It was found

in Nigeria that the weight curve of children who were infected with malaria was flattened out in the second half year of life more than that of children who were not infected (Bruce - Chwatt, 1952). Brock and Autret (1952) also reported that Doucet in the Belgian Congo found that regular administration of paludrine or chloroquine to a group of African children produced an increase in weight of from 2.4 to 4.6 per cent greater than in his control group. Other independent studies, Jelliffe and Onwumere (1953), MacGregor et al (1956) confirmed this finding in the Gambia and in Nigeria respectively.

This effect of malaria may be partly responsible for the retarded growth seen in those children who were found to have malaria parasitaemia. The institution and foster home children who had a negative parasitaemia could however not be said to be so affected. Transmission of malaria in Western Nigeria is continuous throughout the year. The child

however has a natural passive immunity at birth which lasts for about six months. After this period immunity begins to wane and the child thence stands a higher risk of infection although this can however be suppressed by taking regular antimalarial prophylaxis. The high incidence of malaria parasitaemia in Ilora motherless babies and the Ilora control group may be related to the rural nature of the area with its poorer sanitary conditions. With the exception of the motherless babies living with relatives and of the foster home children, all other groups were on weekly pyrimethamine prophylaxis. Two of these five groups on prophylactic treatment had positive blood films to a varied degree. Amongst reasons for these findings were probably that the drug had not been taken at all or taken irregularly or had been given in inadequate dosage. Pyrimethamine resistant malaria has however been reported in a group of Nigerian children (Lucas et al, 1969) and could therefore partly account for the malaria parasitaemia in these children. It is interesting

to note that no malaria parasitaemia was found in the groups of institutional and foster home children. In institutions, it is most likely that the drugs would be given regularly and in the right dosage as part of routine care thus making it fully effective.

(iii) Ascariasis

Ascariasis is a common occurrence in Nigerian children. As cited by Cowper (1966), Okpala (1956) and Onabamiro (1957) reported infection rates of 73% and 59% respectively. Gilles (1964) discovered a similar high infection rate of 70% in 600 villagers at Akufé near Ibadan. Amongst his subjects was a child of six who passed 80,000 ova per gram of faeces. Although the highest incidence is found in children who become infected in the first few years of life, it is not uncommon in adults (Fisk, 1939; Cowper and Woodward, 1960). The present study showed the absence of ascaris ova in the stools of children in institutions but that the stools of children in the other groups examined had the ova to varying degrees. Apart from the pathological lesions produced in the lungs through

the migration of ascaris larvae (Beaver and Danaraj, 1958; Gilles, 1964) the adult worm may affect adversely the nutrition of the human host. According to Jelliffe (1953) this can happen in several ways, namely, by ingestion, digestion, and also by absorption of the host's food. Nicholls et al (1961) considered ascaris and hookworm to be aetiological factors in the pathogenesis of Kwashiorkor -- a protein-deficiency disease.

The degree of ascaris infestation in these children is not unrelated to the degree of personal and environmental hygiene. Children are always reaching for things and putting them in their mouths. The radius of movement of institutional children was rather restricted and the environments in which they lived relatively clean. It is not surprising therefore that these children were free of ascariasis even though there was no history of the children having been dewormed at any time during their stay in the homes. On the other hand the children in the other groups had ample space to crawl around on the highly

contaminated grounds. The extent to which ascaris interferes with growth in these children may be related to the severity of the infection.

4. Nutrition

Protein deficiency can be detected on clinical grounds by the presence of substandard weights, the appearance of marasmus and signs of avitaminosis and low packed cell volumes in some of the children. Jelliffe (1952) pointed out that it was rare for an African baby to survive under normal circumstances without breast feeding. Thus a motherless baby stands a very poor chance of survival and invariably dies of starvation or gastroenteritis. Jelliffe states "A moderately severe case of marasmus was seen in Ibadan recently. The mother of the infant had died during childbirth and the grandmother had suckled the baby who at the age of three months weighed only 6 lbs." The poor to totally inadequate milk output of such 'substitute mothers' would account for protein deficiency in the case described by Jelliffe (1952).

Apart from wet-nursing, a motherless baby could also be fed on extracts of native herbs which may be irritant to the gastrointestinal tract and thus further complicate the inadequate nutritional intake. Very often, the child is put on bottle feeding and the unhygienic preparation of such feeds leads to intestinal infection. Moreover since the families of these motherless babies cannot afford to buy regular supplies of dried milk on the market, the milk powder is usually given in very small measures to make it last longer. The result is a highly contaminated diluted milk. The child has frequent episodes of diarrhoea, becomes severely under nourished and subsequently dies of gastroenteritis or marasmus. In the older child, the semi-solid feeds are given about the age of eight months and are supplemented with bottle feeding till about the age of twelve months. Then the child is weaned to eating softened portions of adult's food consisting mainly of carbohydrates from maize, cassava and plantains. The practice of left over feeds for children in Nigeria results in inadequate

apportioning of this unbalanced diet and as these left over feeds are usually kept unrefrigerated, they are subject to infection. Although no analysis of the diet of any group was performed, it is reasonable to expect that children in institutions probably enjoy a much better balanced diet especially where trained staff are in attendance and traditional food taboos are not operational. For example, the Lagos Home had a catering officer who arranged a balanced diet and the other homes trained nurses or other staff aware of the nutritional needs of the children.

Pot bellies were seen in all the children in Ibadan Home, even those on milk feeds. This condition could not be ascribed to ingestion of excessive carbohydrates and was probably due to hypotonicity or gaseous distention of lax abdominal muscles, or a combination of both these factors.

Some Supplementary Observations

Enlargement of the liver and spleen

From the investigations carried out in the Gold Coast and the Gambia by Colbourne et al (1950) and McGregor and Smith (1952) respectively, it was postulated that enlargement of the liver was due primarily to malaria and probably an associated nutritional aetiological factor. Subsequent investigations by McGregor et al (1956) showed that hepatomegaly might be due entirely to malaria and malaria as a cause of splenic enlargement has been shown by Macgrath (1948) and Gilles (1964). The number examined in the present study was small and as most of the groups were on antimalarial prophylaxis therefore it is possible that the hepatomegaly observed was due to malaria and nutritional factors and that splenomegaly was entirely malarial in origin.

Packed cell volume

The results show no correlation between the mean packed cell volume and the parasite rate in each group (Table 47) and therefore malaria was an

unlikely cause of the anaemia found in some of the groups. Other factors must be considered such as undernutrition in the mother leading to inadequate stores of iron in the child at birth or inadequate intake of essential vitamins and minerals.

Haemoglobin genotype

With the exception of the foster home children, the haemoglobin genotype distribution among the groups is very close to those found in children under five years of age in Akufé village near Ibadan (Gilles, 1964). The rather high incidence of sickle-cell trait found in the foster home children might have been due to sampling error.

Urine

Traces of albumin and sugar were found in some specimens. The occurrence of these in normal urine has been described in Nelson's Textbook of Paediatrics (1969). According to Stanfield (1962) significant pyuria is said to exist when the white cell count is over 10/cmm. Red cells and white blood cells were

found in small numbers and these may be considered to be within normal range (Nelson, 1969). However, significant pyuria with or without infection is a not uncommon occurrence in Nigerian children (Ransome Kuti and Ransome Kuti, 1967).

Summary

It is suggested that the interaction of various factors affect the growth pattern of the motherless child. Important are indigenous beliefs and cultural practices, psychosomatic effect of maternal deprivation, infections and inadequate nutrition.

Malaria parasitaemia occurred in some groups on drug prophylaxis and irregular dosage is suggested as a possible factor for this finding. The mean packed cell volumes were not significantly below the standards for the age groups and it is possible that such anaemia as existed may be nutritional or due to an inadequate store of iron at birth. The incidence of spleen and liver enlargement is lower than the figures reported by past workers (McGregor et al, 1956; Gilles, 1964) and this may be attributed to the relatively small

samples in this study and to the fact that most of the children were on antimalarial prophylaxis.

Ascaris ova were absent from the stools of children in institutions but were present in other groups which may be an indication of the relatively better environmental hygiene of the institutions.

CHAPTER VIPSYCHOLOGICAL ASSESSMENT(i) Material and MethodsIntroduction

Among the fundamental needs of an infant are the physical contact, the joyful faces, the human voice and any other form of interpersonal communications which are ordinarily supplied by a loving mother. It is well known that mothers generally have more contact with young children and her influence on them usually predominates. Maternal deprivation in various forms is known to have adverse effects on child development. The evidence for this has been extensively reviewed by Bowlby (1952) who placed great emphasis on the loss of the maternal figure and also suggested that emotional disorder in the child arises from a disruption of the affectional bond with his mother or parent substitute (Bowlby, 1958, 1964).

This chapter is concerned with the mental development of motherless babies in the different circumstances of their upbringing. Psychological tests were performed

on each child to elicit any differences in their developmental status from being reared in different settings.

Material and Methods

284 children, 100 in institutions, 30 in foster homes, 82 living with families and 72 in the control groups were examined. The 100 institutional children comprised 53 in Ibadan Home (IBMH), 30 in Legos Home (LHM) and 17 in Kersey Children's Home (KCH). The 82 motherless babies living with families consisted of 20 under the supervision of the Save the Children Fund (SCF), 28 in Ilora (ILMB), and 34 living with relatives (MBLR). The 72 in the control groups comprised 32 in Ilora (ILOG) and 40 in Ibadan (IBCG). All the children were in the age range of two months to five years and from comparable socio-economic backgrounds. The age distribution is shown in Table 48.

Description of tests

Examination rooms were provided in the institutions and child-welfare centres and wherever possible a person familiar to the child was present throughout testing to establish rapport between the child and the examiner.

Each child was examined separately and on average 15-20 minutes was necessary to complete the psychological assessment.

A complete physical examination of each child was undertaken to elicit any abnormality or deformity and a history of prematurity, birth trauma or seizures were considered as significant factors which might affect mental development. The antenatal, confinement and postnatal histories were not available for many of the motherless babies living with their families nor were these available for the foster home children and for those in institutions, this information was either unavailable or grossly inadequate.

Griffith's Baby tests were administered to children under two years and for those between 2 and 5 years, the Revised Stanford Binet (Terman and Merrill, 1960) was used. Because of the socio-cultural differences, both tests were modified to suit Nigerian children by substituting familiar objects for those considered unfamiliar or foreign to the children (Durojaiye, 1969 personal communication). The various items in the Griffiths Baby tests were grouped into five sub-scales (Griffiths 1954) in an attempt to estimate developmental

achievement in the following skills - locomotor, personal-social, hearing and speech, eye and hand and performance. Each sub-scale consisted of 52 items covering from birth to two years giving a total of 260 test items. Each child was given a cross section of the items appropriate to his age and the subscales were scored separately.

PSYCHOLOGICAL ASSESSMENT(ii) ResultsResults of Griffiths Baby Test for Children aged up to two years

- (1) The basic findings in the form of median score, overall median score, chi-square value and the P value for each variable are presented in Tables 49 to 53. An extension of the median test was used to test the significance of differences between the groups.

Frequency Distribution of Scores

Tables 49 to 53 present the frequency distribution of scores and the median score for each group in each of the variables tested. The results show asymmetric distribution of scores and also that there are significant differences between groups with respect to their median scores.

Test of significance for differences between selected groups(i) Comparison of children in institutions

The median score of LHMB is significantly greater than that of IBHMB in each of the five variables but is not significantly different from that of KOH. The median score of KOH is however significantly greater than that of IBHMB in two of the five variables, hearing and speech and performance.

(ii) Comparison between children living with families

Although there are differences in the median scores between these three groups, MBLWR,

ILMB and SCF, these differences are not significant for each of the variables.

(iii) Comparison between the control groups

For each of the five variables, the differences between the median scores of the two control groups are not significant.

Where in any group, its sub-groups are found not to be significantly different with regard to their median scores, the latter have been pooled together and the average median score used in subsequent statistical analysis.

(iv) Comparison between children in institutions and children living with families

In each of the skills tested, the average median score of children living with their families is significantly greater than that of institutional children.

(v) Comparison between children in institutions and children in the control groups

The average median score of ILMB and KCH is not significantly different from that of children in the control groups on the locomotor, personal-social, eye and hand scales, but significantly greater in the hearing and speech and performance scales. The median score of ILMB in personal-social, hearing and speech items is not significantly different from the average median score of the control groups, but significantly lower in locomotor, eye and hand tests.

(vi) Comparison between children living with families and children in the control groups

The average median score of the three groups of children living with their families, MLWR, ILMB and SCF is significantly greater than the average median score of children in the two control groups on all tests.

(vii) Comparison between children living with families and foster home children

The average median score of children living with their families is significantly greater than the median score of foster home children in all the five variables.

(viii) Comparison between foster home children and children in the control groups

The median score of the foster home children is not significantly different from the average median score of children in the control groups on all tests.

(ix) Comparison between foster home children and children in institutions

The average median score of LMNB and KCU is not significantly different from that of the foster home children in each of the five variables. On the other hand, the median score of IBMB is significantly lower than that of IFC in all the skills except locomotor.

Coefficient of concordance among the variables

The rankings of the median scores for each group and for each variable are shown in Table 54. Kendall's co-efficient of concordance, W, was used to see how consistent the variables are in rating the performances of the groups studied using their median scores. The results show that the degree of concordance among the five variables is very high and is significant.

Summary

The average median score of motherless babies living with families is significantly greater on all

tests than that of children in the control groups or in foster homes or in institutions. The average median score of children in two of the three institutions (Lagos and Kersey Children's Homes) is not significantly different from that of children in the control groups in locomotor, personal-social, eye and hand skills, but is significantly greater in the hearing and speech items. The average median score of children in Lagos and Kersey Children's Homes is not significantly different from that of the foster home children on all tests.

(2) Median, overall median and Chi-Square values of I.Q. scores of children up to 2 years of age

The frequency distribution of I.Q. scores of all groups of motherless babies and of the controls are presented in Table 55. Comparison between the groups with regard to their median scores shows that there are differences which are highly significant.

Tests of significance for differences between selected groups
selected groups

(1) Comparison of children in institutions

The median I.Q. score of IBHMB is significantly lower than that of LMBB and KCH respectively, but the difference between the median I.Q. scores of the latter two is not significant.

(ii) Comparison between children living with families

There is no significant difference between the median I.Q. scores of the three groups, namely MBLWR, ILMB and SCF.

(iii) Comparison between the control groups

There is no significant difference between the median I.Q. score of IDCG and that of ILCG.

(iv - ix) Comparison between other selected groups

The average median I.Q. score of children living with their families, MBLWR and SCF, is significantly greater than that of children in institutions or in foster homes but not significantly different from that of children in the control groups. The average median I.Q. score of the control groups is significantly greater than that of children in institutions and foster homes.

Lastly, the average median I.Q. score of children in Lagos and Kersey Children's Homes is significantly greater than that of children in foster homes.

(3) The median, overall median and Chi-Square values of the I.Q.'s of children aged 2-5 years

The frequency distribution of the I.Q. scores and of the median I.Q. scores in the groups of motherless babies and the controls are presented in Table 56. Tests of significance show that the differences between the groups in regard to their median scores are significant. Institutional children were not tested as their numbers were too small for any valid analysis.

Comparisons of their median I.Q. scores were also made between:

- (i) Children living with their families -
Motherless babies living with relatives,
Iloro motherless babies and children under
the Ilesha Save the Children Fund;
- (ii) Children of the Ilora and the Ibadan control
groups;
- (iii) Children living with their families and those
of the control groups;
- (iv) Children living with families and those in
foster homes;
- (v) Foster home children and children in the
control groups.

In all the above groups compared, differences found

were not significant with the exception of (iv).

PSYCHOLOGICAL ASSESSMENT

(ii) Discussion

Differences have been shown to occur in developmental status among the nine groups of children studied. It is not tacitly assumed that maternal care alone accounts for these differences especially as an important consideration is that of the age at which the tests were performed. Table 43 which provides data showing the mean age and standard error for each group reveals that in age the groups are comparable. The possibility of any differences being due to genetic variation could not be tested in view of the fact that seven out of the nine groups studied were motherless babies. It was thus impossible to allow for hereditary influence by any concomitant test of the mother's intelligence and an added obstacle was the unavailability of the fathers for such testing. The possibility that the intelligence of foster parents might influence the test performance of their fostered children could not be verified. Any effect might be by chance especially since no selection of the foster parents on grounds of

their intelligence was made and the same standards applied to all foster parents.

It might be suggested that the differences observed between groups might be due to the fact that some groups lived in an urban and others in a rural environment. In the case of institutional children who lived in an urban environment, city life could exert no influence on them as they were hardly exposed to it. The children in foster homes and those under the supervision of the Save the Children Fund lived in old parts of the towns where modern ways of living made no greater impact on them than on the groups of children residing in rural areas. This argument is reinforced by the fact that the control groups, drawn from both urban and rural communities, were very similar; their median scores in each of the developmental scales and their I.Q.s were not significantly different.

Finally, the average length of stay of children in institutions must be considered since this factor may be related to the scores obtained. The correlation co-efficient (Table 57) shows that there is an inverse

relationship between the average length of stay in the institution and the mean score, i.e. the longer the stay, the lower the score. Because of the differences between the three homes in the mean length of stay, the mean score for each home was adjusted to an equal average length of stay. The results show that Ibadan Home Children had a significantly lower mean I. q. score than the other two, Lagos and Kersey Children's Homes. The relatively poor performance of the Ibadan Home children could not therefore be attributed to the length of stay in the home. Possible explanations for the differences in developmental status among these groups of children might appear to be twofold, the quality of substitute care and the immediate environments.

The results of the psychological assessment showed that certain groups were so consistent in their performances that there seems little reason to relate the results to faulty sampling but to the rearing situations of these children. A striking feature is the consistently poor performance of children in Ibadan Home and the relatively good performance of the motherless babies living with families. The findings under the following four sub-scales - (1) locomotor and

eye and hand; (2) personal-social; (3) hearing and speech; and (4) performance - are now discussed in detail. The locomotor and eye and hand skills although assessed separately for testing purposes are considered together here because of their close functional inter-relationship.

(1) Locomotor and eye and hand sub-scales

The nurses in Ibadan and Kersey Children's Homes had little time or urge to pick the children up and cuddle them and thus the children tended to be left too long on their backs. Possibly as a result of inexperience in being held upright, the RCH and IBMB groups performed poorly on tests which involved holding the head erect and steady and this may also explain why these children obtained low scores in visual and postural items. It is interesting to note that the scores achieved by the IFC group in locomotor and eye and hand sub-scales, though higher than those of IBMB and IBCC children, were nevertheless comparatively low when compared with other groups. Eleven out of sixteen foster

parents went out to work leaving the children in the care of neighbours and house-maids and consequently the younger children tended to be left too long on their backs and the toddlers were usually confined to the living room.

The children in both control groups also had low median scores. Their mothers were young and active and mostly engaged in outdoor occupations and in order to be freely mobile, the children had to be carried on the mothers' back, a "cradle practice" not uncommon in Nigeria. This practice restricts movement and prevents the child from wandering around, grasping for and playing with objects and practising new locomotory skills. It is thus suggested that this relationship between the test items and postural - visual restrictions accounted for the low scores on these subscales of IBHMB, KCU, IFC, ILOG and IBOG.

(2) Personal-social sub-scale

In the first six months of life, the social demands of the infant are initiated not so much by the infant's activities as by those of the adult. In Ibadan Home, the only contact with an adult person

was with the nurse. As she worked in shifts, adequate opportunity to make any lasting attachment or to exchange emotional feeling was lacking. The children therefore lacked self-identification with those who ministered to their needs. Most of the children remained passive and were not interested in toys and persons and further showed this rejection of adult persons by not conforming to the social norms such as in bowel and bladder control at a certain age. On the other hand, children carried on mothers' backs wriggle whenever they have the urge to urinate or defaecate and thus are trained at a very early age in bowel and bladder control. It is therefore possible that motherless babies living with their relatives and the children in the control groups would pass these milestones relatively easier than those reared in institutions who were never subjected to the "cradle-practice".

If reared in a domestic setting, the child would be encouraged to do things for herself and would soon learn much from the substitute mother who invariably spent more time with her. In

Ibadan Home, everything was performed to a schedule and the children always had to rely on the nurses as is illustrated in Fig. 10 where a nurse feeds five children at the same time to save time.

The situation in Lagos and Korsev Children's Homes was different. The walls of the latter were brightly painted and decorated with animal pictures, a form of social stimulation through innate objects. Lagos Home had an added advantage in being very much in the public eye. Wives of diplomats, voluntary workers, holiday makers and other interested persons called at the home regularly to play with the children and thus to provide for them an additional contact with people beyond the walls of the institution. Moreover the nurses having had some in-service training were better equipped to attend to the psychological needs of the children. These factors might be largely responsible for the comparatively good performance put up by the children in Lagos Home in personal-social tests.

(3) Hearing and speech sub-scale

IBHMB had also the lowest median score on the hearing and speech sub-scale. The children in

the home were hardly spoken to as the nurses were too busy with the daily routine work. Another deterrent factor was the wireless which blasted all day long in the living room and the volume of background noise was seldom low enough to encourage conversation between children and the staff. It is therefore suggested that lack of verbal communications could be partly responsible for the low scores of IBUMB.

(4) Performance sub-scale

Once again the Ibadan Home children had the lowest median score. Opportunity for developing infant skill was slight as the children were not provided with the means of practising any activities. The toys were few and shared by others in the home. The infants were either lying on their back in their cots or sitting up and staring motionless into space. The older children never had any opportunity to think of how to solve a problem because they were never exposed to any. These factors could account why children in Ibadan Home performed badly in tests involving manipulation and abstract thinking, such tests as "Reacts to paper on face, pulls it away"; "Shows interest in box and tries to take hold of it".

This restricted opportunity for developing infant skills through practice was noticed in the children in foster homes and control groups but not to the same extent. The children in Kersey and Lagos Homes were more active, had a greater variety of toys to play and experiment with and consequently scored better than those in Ibadan Home.

Motherless babies living with their families occupy a unique position in the context of the socio-cultural conditions in Nigeria. They are regarded as children who must be specially looked after. Soon after separation from the mother and when the decision has been made to care for the child within the family unit, a female member of the family, usually the child's paternal grandmother or the most senior wife of the father, is assigned the responsibility of caring for the child. Although the motherless baby identifies herself mainly with the substitute mother, who cuddles, bathes, feeds and clothes her, the other members of the family also feel that they must contribute to the care of the child. She is bought

plenty of toys, spoken to regularly, and mixing freely with young and old members of the family grows up with a strong sense of security. Thus it may be reasonably assumed that in most extended families, a motherless baby living with such a family invariably receives more individual and group attention than a child in the control group who is at the best just another child in the family. It is not surprising therefore that motherless babies living with their families gave relatively better performance than children in the control or other groups, on each of the skills tested.

Intelligent Quotient (I.Q.) scores of children up to two years of age.

Results of the I.Q. scores of children under two years of age show that the highest median I.Q. scores of 111 and 117 were obtained by SOf and MBLWR respectively, closely followed by IBOG and ILGG with 103.4 and 102 respectively. The ILMB and IFC groups obtained median scores which were mid-way between those of the control groups and of the KCH and LOMB groups. Ibadan Home had the lowest median score of 75. Although the individual

I.Q. scores of ILMB, ranging from 73 to 108 were reasonable, they were poorly placed when compared with other groups.

Some comments about the differences in test scores may be illuminating. Examination of the individual scores of children in the control group in Ilora (ILCG) showed that the younger children aged between three to six months obtained comparatively higher scores than those older (Table 58). Only one child of the six tested in the ILMB group was under one year and his score, 108, was highest. This age factor may account for the apparently low median I.Q. score of the ILMB group.

Intelligent Quotient (I.Q.) scores of children between 2 and 5 years of age

Between two to five years of age, the differences in the median I.Q. scores between the groups were not significant in four of the five comparisons made. All children are to some extent physically dependent on and feel helpless without their mothers until such time as they become entirely self-sufficient in regard to their physical needs and when they can feed, toilet and dress themselves. By this time, the new mother substitute may become accepted and the children adjusted to their new environment. It may be inferred therefore that these children will show no significant differences in

their I.Q. scores at this age but whether this is a temporary or permanent adjustment calls for further research.

Summary

212 motherless babies receiving different types of substitute care and 72 children in two control groups were examined regarding their developmental status. The results showed that motherless babies living with their families and who were under two years of age achieved better test performances in each of the developmental scales than did those in any of the other six groups.

Ibadan Home gave the poorest performance in all the test items under the sub-scales of the Griffiths Baby tests and the other two institutions, Kersey and Lagos Homes, attained levels which were not only as good as but better than the levels attained by children in foster homes and in the control groups. Attempts have been made to relate these differences in levels of performance to the quality of care given to the children in the various groups and also to the amount

of stimulation provided by the immediate environment in which these children lived.

The study further showed that after two years of age differences between the levels of intelligence in these children were not significant except for those of children in foster homes who gave better performances than children living with their families. It is also suggested that after two years of age the children had through processes of learning adjusted to their new environment.

CHAPTER VIISOCIO-ECONOMIC BACKGROUNDMotherless babies and their families

In considering motherless babies and their families, many questions arise. Among these are, what is the cause of separation of mother from child? What type of children, and from what socio-economic background, come into care in institutions and foster homes? How much contact does a child in institutional care have with his family and finally how much does it cost to keep a child in an institution?

In order to answer such questions, an attempt was made

- (1) To investigate the causes of separation of the mother from the child;
- (2) To study the socio-economic background of those children;
- (3) To ascertain to what extent the families maintain contact with their children in institutions; and
- (4) To investigate the cost of caring for a child in the institutions, foster homes and in the Ilora Health Centre respectively.

Methodology

Information was collected from the children's relatives, the matrons and assistants in the homes and from the foster parents by direct interview and also by the use of a questionnaire (Appendix C).

1. Cause of separation

Unless another cause was definitely ascertained, all maternal deaths occurring at birth and within six weeks after childbirth were classified as obstetric. Analysis of the deaths shows that 56% of them occurred within the first week of confinement. (Table 59) and that maternal death due to immediate or remote obstetric causes accounted for the majority. Other causes of separation in order of importance were abandonment, insanity, marital problems and civil war (Table 60).

2. Socio-economic background

The socio-economic status of any family can be judged by the occupation of the father. In Kersey Children's Home, there was no record of the father's occupation and the relatives were not easily accessible to ascertain it. Scrutiny of the occupations of the fathers of children in the other

groups shows that, with the exception of those of the children in Lagos Home who were mostly traders and clerks, a large proportion were farmers (Table 61). Only a few fathers were in professional or administrative occupations such as teacher, policeman, or civil servant. Most classified as craftsmen were in fact labourers.

3. Frequency of family visits to institutional children

Information about the child's contact with the father or any other member of the family was obtained from the staff of the three homes. The classification of the frequency of contact was:- "regularly visited" if visited by any member of its family about once a week, "fairly regularly" once in two weeks and "occasionally" if visited once a month or less. Table 62 gives details of an analysis of the frequency of visits by relatives. 15% of the children in Ibadan Home and 20% in Lagos Home but none of the children in Kersey Home were "visited regularly". 15% in Ibadan, 20% in Lagos and 10% in Kersey Home were visited "fairly regularly". 55% in Ibadan, 33% in Lagos and 80% in Kersey Home were visited only "occasionally". Only 10 out of the 83 had no visits from them.

The frequency of such visits in relation to the distance from the child's natural home was studied and the results are presented in Table 63. All the eleven children whose homes were within five miles radius from the institutions were visited regularly. Not one of the 38 children whose homes were within five to ten miles radius was visited regularly but 11 were visited fairly regularly, 21 occasionally and 6 not at all. Of the 29 children whose natural homes were over 10 miles distant, 2 were visited fairly regularly, 23 only occasionally and 4 not visited.

4. Cost of care

Details of the cost of caring for these children were obtained from the financial statements in the annual reports of the homes. The amounts reported did not include the cost of drugs, food, dry milk, clothes, dormitory equipment and household utensils, all of which were donated by commercial firms and voluntary organizations in Nigeria and abroad. The salaries of the matrons in Ibadan and Kersey Homes which were paid by voluntary organizations overseas were also not included.

The total monthly expenditure and the cost per individual child weekly for each method of care are detailed in Table 64. The cost per week of keeping a child in Kersey Home was £3.3s., in Lagos Home £3.2.6d, and in Ibadan Home £2.11s. The cost of those cared for by the Save the Children Fund's Scheme was unable to be ascertained as it was regarded by the officials of that organization as classified restricted information. A foster home child cost 15/- per week whereas an Ilora motherless baby cared for by her relatives cost 7s. 2d per week for the day care and supervision provided in the Ilora Health Centre.

Discussion

It has been already mentioned that maternal mortality is high in Nigeria as compared with European countries. It is therefore not surprising that maternal death is the major cause of mother-child separation.

The proportion of children abandoned is significant and although reasons for abandonment are unknown, it is suggested that illegitimacy and insanity may be possible reasons.

It can reasonably be inferred from a study of the average annual income of the various occupational groups in the Western State (Table 28) that most of the fathers of these motherless babies come from low income groups. However, the motherless babies living with relatives, those in care under the Save the Children Fund and the motherless babies in Lagos Home appear to come from better family backgrounds than those of foster home children and of motherless babies in Ilora.

Although most motherless babies come from poor families, the father despite his poverty still wants the best for his child; it is ironical to note that many choose to put their children in institutions which by Nigerian standards are very expensive to run. An institution with its beautiful surroundings and apparently good care and feeding appeals to any father from a poor home and he naturally believes that his child is better cared for in such an institution. His genuine fear that the child at home may die from poverty and/or ignorance is yet another possible explanation for the choice of institutional care. Lastly and

especially in the case of those children with no contact with relatives, an institution may have been to some fathers a way of avoiding direct responsibility for the child.

The frequency of visits seems to depend largely on the proximity of the child's natural home to the institution. Considering the economic status of the fathers and the poor means of transport, most fathers would find it difficult or even impossible to maintain regular contact. Most lived on farms and villages more than 10 miles distant from the institutions and apart from the cost of transport a visit to his child might entail leaving his poorly paid occupation for three or more days. Thus the average farmer earning about £4 to £5 a month would find it impossible to pay the monthly contribution of £3 to £4 for the upkeep of his child and to maintain regular contact with him in the institution.

Summary

This chapter has dealt with the motherless baby and his family. The findings show that maternal death was the major cause of separation of mother from child

and that motherless babies came from the low income group. There is an inverse relationship between the distance from the child's home to the institution and the frequency of visits. The majority of the children in institutions were visited only occasionally unlike those in Lagos Home who were visited more often by their relatives.

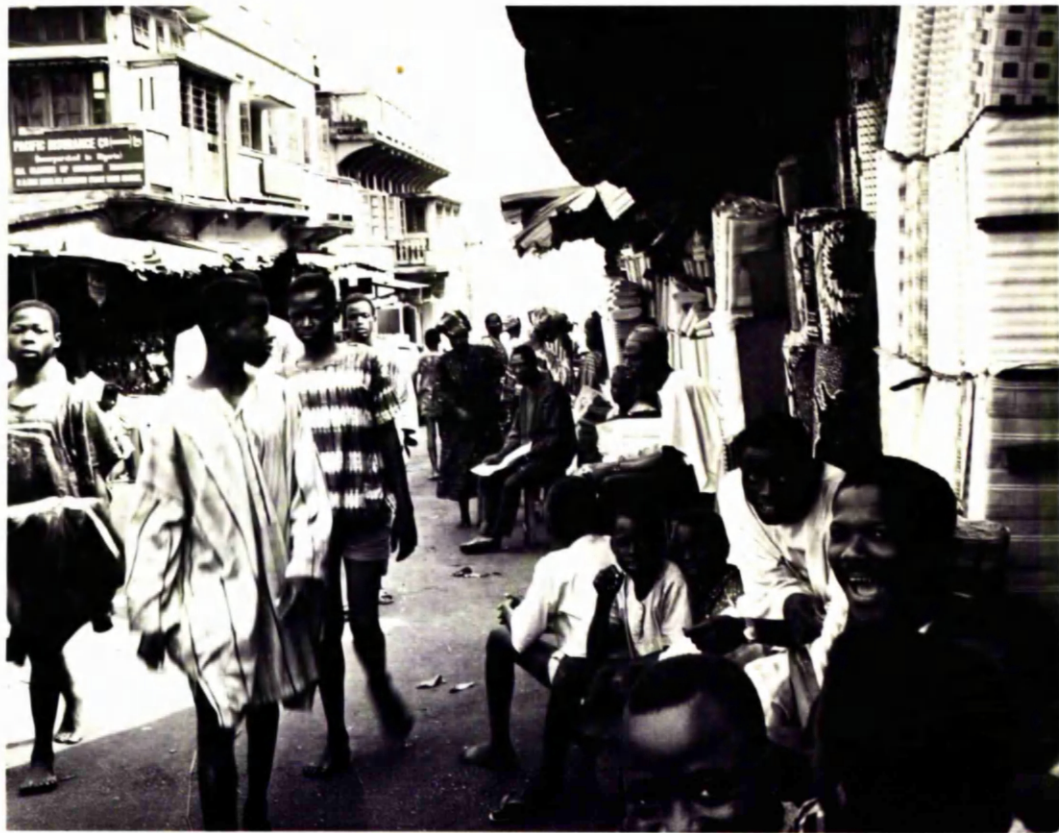
The day-to-day running of institutions was expensive compared with the cost of other methods of care.

CHAPTER VIII

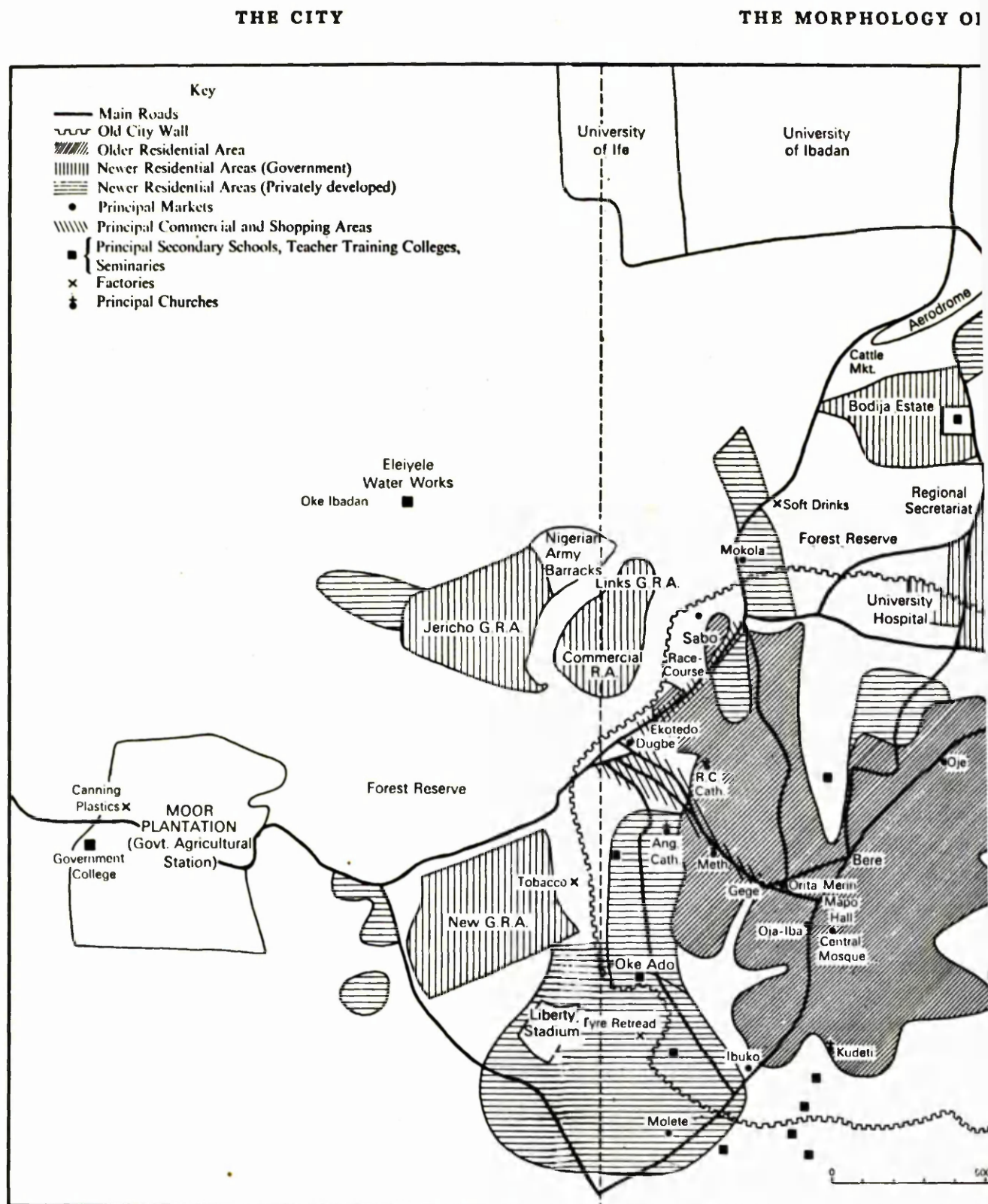
COMMUNITY OPINION SURVEYS

Motherless babies and the community
including Figures 53 to 60

Fig. 53. A TYPICAL VIEW IN THE COMMERCIAL CENTRE -
IBADAN



**Fig. 54. MORPHOLOGY OF IBADAN SHOWING THE
RESIDENTIAL AREAS**



MAP 6. IBADAN, RESIDENTIAL AREAS, SERVICES AND AMENITIES.

FIG. 55 IBADAN TOWN - AERIAL VIEW



FIG. 56. IBADAN TOWN - CLOSER VIEW



Fig. 57. A TYPICAL MODERN BUILDING IN
THE NEW RESIDENTIAL AREA -

IBADAN



Fig. 58. MAP OF ILORA

Fig. 58

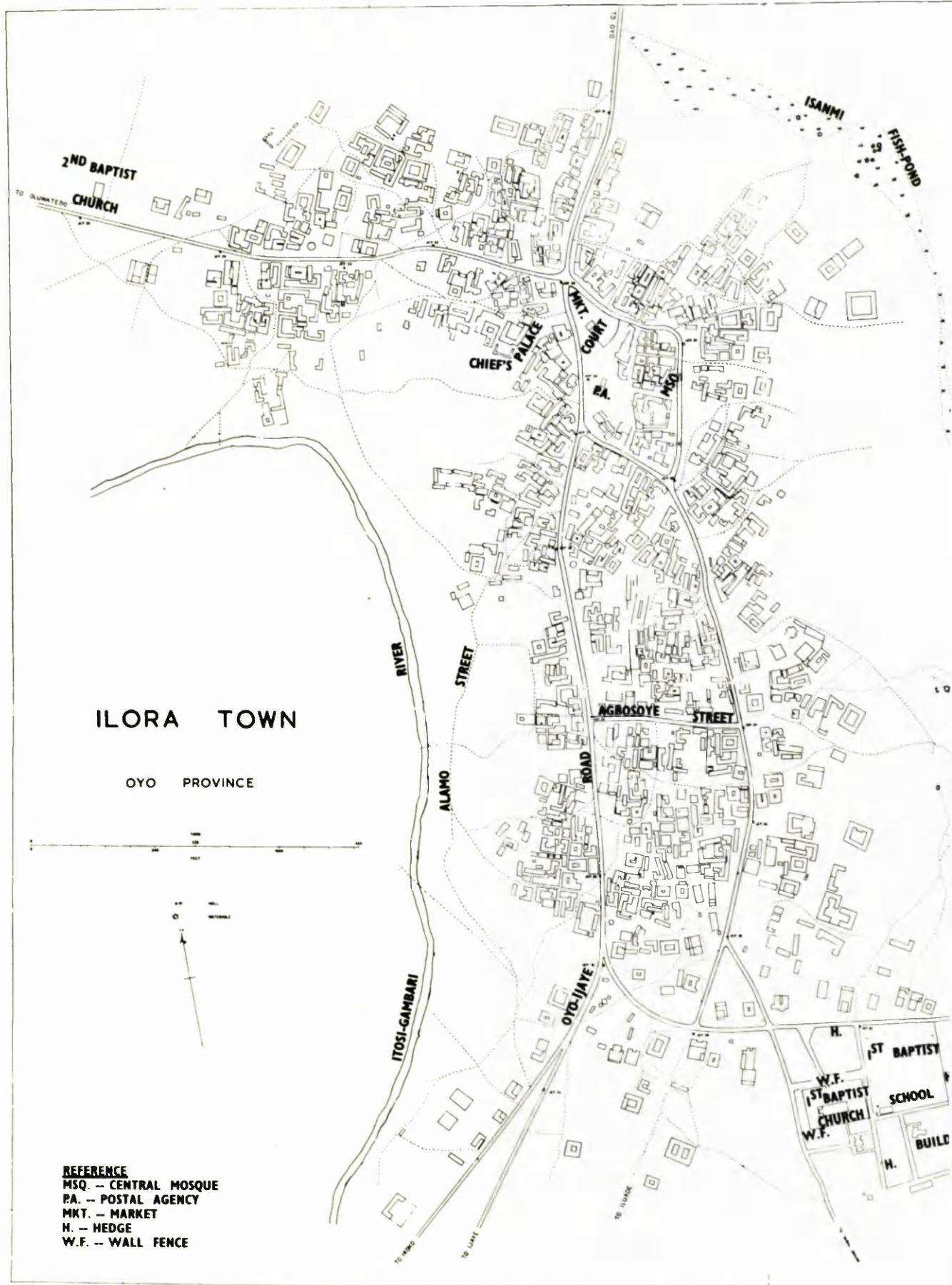


Fig. 59. ILORA HEALTH CENTRE





A TYPICAL EXTENDED FAMILY

- Middle Row: In the centre is the head of the family; On his left his wife nursing their grand-child and on his right his son and daughter-in-law with their child.
- Front Row: Grand-children of three of the sons of the head of the family.
- Back Row: From left to right: Two daughters of the head of the family; [the Medical Officer of the Ilora Health Centre (the author) and her assistant]; the second wife of the head of the family, another daughter-in-law; [the driver who drove the author and her assistant to most villages visited in the survey and the sister of the Ilora Health Centre]; and two other daughters of the head of the family.

CHAPTER VIIICOMMUNITY OPINION SURVEYSMotherless Babies and The Community

It cannot be over-emphasized that the survival of any programme which caters for the welfare of motherless babies partly depends on the attitude of the public. Opinion surveys were thus designed and conducted in a cross-section of two different communities. The main objectives sought were:

- (1) To determine the extent of public knowledge of existing methods of care for motherless children and
- (2) To assess public opinion on these methods and to motherless babies. Two areas, Ibadan and Ilora representing urban and rural communities respectively, were chosen for these surveys.

Ibadan(1) Geographical location

Ibadan, headquarters of the Western State of Nigeria, is situated in the south forest zone about

90 miles by road from Lagos, capital of the Federal Republic of Nigeria (Western State, 1971). Ibadan has a population of 627,379 people most of whom are Yorubas. By virtue of its geographical location between the coast and the interior, Ibadan has attracted people from neighbouring villages and towns and has become the commercial centre (Fig. 53) as well as being the administrative and educational centre of the Western State.

2. Social environment

Ibadan (Lloyd et al., 1967) is heterogeneous and can be divided into three social areas, an older residential and two newer residential areas - one privately developed and one government built (Fig. 54).

(1) Older residential area:

This area, consisting of several sub-areas, is the oldest part of Ibadan and is characterised by a vast aggregation of rusty tin roofed mud buildings (Figures 55 and 56) which still form the living quarters of the mass of Ibadan people. In this area, people hold very strongly

to old traditions and beliefs and are linked together by powerful extended family ties. Each individual looks to his lineage for advice, companionship, care and protection. The head of the family usually the oldest man presides over all family affairs. Polygamy is widely practised.

Many of the men are farmers who travel regularly between the town and their plots in the country whilst the women are mostly traders, an occupation which they find socially as well as financially rewarding. In Nigeria, both these men and women are classified as in the low income groups. (Okediji, 1969).

(11) Privately developed newer residential area:

This privately built area, also divided into sub-areas, is occupied largely by settlers from other parts of the country and these include Ibos from Eastern Nigeria, Yorubas from other parts of the Western State and Hausas from Northern Nigeria. They are a

mixture of professional and non-professional classes and may be regarded as the middle income group; the more prosperous of these settlers have built houses and flats which they let. Old beliefs and traditions are not so deep rooted here as in the older residential area and although a few men still have more than one wife, polygamy is being abandoned.

(111) Government built newer residential area:

The upper social classes live in this government owned area of very modern buildings (Fig. 57). Adherence to old traditions and beliefs is hardly noticeable and monogamy is almost universal.

Iloro

(1) Geographical location

Iloro situated 30 miles North of Ibadan is set in the transition belt between the high forest zone of the south and the grasslands of the north. It is a comparatively small Yoruba town with a population of 21,665 inhabitants.

Iloro, although fundamentally rural in

character, is however part of one of the twenty-five administrative centres of the Western State and added to this as it has over 5000 of a population, it enjoys the status of a town (Babour and Frothero, 1961).

(2) Social environment.

Unlike Ibadan, Ilorin is a homogeneous area. Two parallel roads (Fig. 58) divide the town into three strips which are connected together by a network of small roads and pathways. Among the important buildings are the chief's palace, the Grammar School and the Health Centre (Fig. 59). The people are still very attached to their community and their homes of origin and like those inhabitants of the older residential area in Ibadan, they are linked together by extended family ties. When a girl marries, she automatically becomes part of her husband's lineage although she maintains her patrilineal family tie. Fig. 60 shows a typical extended family unit. The three generations represented there all live together in the one family compound which consists of a number of households in which members of the same lineage live

and the oldest man automatically becomes the head.

Farming of food crops and hunting are the major occupations. However the youths of Ilorin have now started to look beyond the attractions that the town can offer. Many have moved to Ibadan, Lagos, Dahomey and Ghana as these places can offer them the glamour of modern life and jobs other than farming and unskilled labouring. Nevertheless, they still maintain their family ties and return to Ilorin fairly frequently.

Sampling techniques of community surveys

Ibadan survey

Although there is still no complete census list available giving the total population and household distribution, a survey conducted by the Ministry of Economic Planning in 1963 showed the population distribution and the number of houses or family compounds in Ibadan. Because of the heterogeneous nature of Ibadan, it was decided to draw samples from a sub-area, familiar to the author in each of the three social areas already detailed, using population data from the above survey (Table 65).

The number of married persons interviewed was 300. It was not possible because of the inadequate demographic data to attempt a statistically random sampling.

The sub-area of the older residential area chosen was part of the Oja Iba consisting of about 68 family compounds and with a population of 27,994. Every second family compound in the list was included in the survey, and three married persons from each to a total of 100 persons were interviewed.

In the privately built newer residential area, the sub-area chosen was Oke Ado with a population of 33,687 and consisting of 1,534 houses. All side streets lead off the main street which runs through Oke Ado, and interviews were conducted in the tenth house in every second side street. Where more than one family lived in a house, only one member of one family was questioned, and in all 100 persons were thus interviewed.

In the government built newer residential area the sub-area chosen was the Bodija Estate containing 421 houses, with a population of 5,602. Two main

streets divide the sub-area into three broad strips. Every second side street off these main streets was selected, and in them every fourth house visited. Once again, 100 persons were seen and the total interviewed in Ibadan was 300 people all of whom co-operated.

Iloro survey

For other health service purposes, Ilora was divided into four geographical areas by the staff of the Health Centre and these areas consisting in all of about 196 family compounds were used for the survey. Experience had shown that in rural communities most of the men went away to their farms during the week and the women to their various forms of trade. It was therefore decided to enter every family compound and to interview any two available married persons. 260 such persons were thus interviewed of whom 4 refused to co-operate.

In pilot surveys carried out to test the clarity and acceptance of the items in the questionnaire, 50 people in Ibadan and 20 in Ilora had been previously interviewed.

Administration of the Questionnaire (Copy in Appendix E)

All the interviews in Ibadan were conducted by the author with the help of a research assistant previously trained in the interview procedure. In Ilora, four members of the staff of the Health Centre assisted and the contents of the questionnaire were explained to them and trial interviews conducted. Only some minor difficulties were encountered during both surveys. Many of those in the newer residential areas of Ibadan were often out at work during the day and did not like being bothered in the evenings. The 4 persons out of the 260 interviewed in Ilora who refused to co-operate resented the idea of discussing a topic which to them was better left alone. The Yorubas are highly superstitious people and some believe that reference to "death" in any context may bring them misfortune.

RESULTS OF THE COMMUNITY OPINION SURVEYS

Knowledge of the methods of care of motherless babies

The respondents were divided into five occupational groups according to the occupational classification in the Nigerian Census of 1963. Their answers to the following question - "In your own opinion, do you think the different methods of care are publicised enough?" - are detailed in Tables 66 and 67. More than 50% in each

occupational group in both Ilora and Ibadan asserted that the different methods of care were not publicised enough.

Sources of information as regards the various methods of care

Those who stated that the different methods of care were publicised sufficiently were then asked "From where do you get your information?". The various responses are shown in Table 68. 32% of the 116 people in Ibadan obtained the information through the rediffusion system, a one channel booster radio for the Nigerian Broadcasting Service, owned by the Mid-Western State Government and usually erected in the homes of poorer people who pay a nominal yearly rental. 35% stated their source of information was through other news media such as newspapers, television, and the ordinary radio; 9% claimed to receive information from neighbours and the remaining 21% from other sources including relatives, their church, etc.

In Ilora, 68% of the respondents obtained their information through discussion with neighbours, 27% through the rediffusion system, 4% through other news media and the remaining 1% from other sources.

Acceptance of abandoned motherless babies into family homes according to family size

The relevant questions asked form part of the questionnaire (Appendix E) and the answers are shown in Tables 69 and 70. In Ibadan, 46% of childless families were willing to accept abandoned motherless babies into their own homes; the percentage of those with one child willing to accept them was 30; the percentages of those in each of the other categories ranged from 33 to 36. In Ilora, the percentage of childless families willing to accept an abandoned motherless baby was 31 and the percentages of those in each of the other categories willing to accept ranged from 0 to 6.

Adoption was more favoured among those who stated their willingness to accept motherless babies.

With the exception of those families having one child, about 65% in Ibadan and more than 90% in Ilora in each category were unwilling to accept abandoned motherless babies into their homes. The various reasons given are set out in Table 71. More than half of those who refused to have motherless babies claimed

to have enough personal responsibility already whilst some others feared that the child might die.

Placement preference

By placement preference is meant the method of care that would be recommended for motherless babies. Placement within the family unit, fostering and institutionalization were the three such possibilities suggested to each respondent. Adoption was not included as an alternative as this method of care is not legally recognised. The relevant questions asked were included in the questionnaire and the results shown in Table 72. In Ibadan, out of 300 interviewed, 162 (54%) felt that institutional care was best for the child, 127 (42%) suggested care within the family unit and 11 (4%) fostering. In Ilora, out of the 256 respondents, 54 (21%) favoured institutional care, 199 (78%) preferred care within the family unit and only 3 (1%) thought motherless babies were better fostered out.

DISCUSSION

In summary therefore most of those interviewed in Ilora and Ibadan claimed that the methods of care of motherless babies were not publicised adequately.

Those in Ibadan obtained their information chiefly from the news media and those in Ilora from neighbours. A high percentage in both Ibadan and Ilora were not willing to accept abandoned motherless babies into their own homes for various reasons and those willing to accept them preferred adoption to fostering. Care of motherless babies within the family was advocated in Ilora whereas institutionalization was preferred in Ibadan.

The results of the community surveys indicate that the majority of the people in urban and rural communities had little knowledge of the different methods of care. It might be that this lack of knowledge was due to the high illiteracy rate and the people therefore unable to obtain information from newspapers, magazines etc., or was due to poverty causing inability to afford relative luxuries like radio and television. If this were so, the professional group who were all literate and probably all in possession of radio and television should have had a fairly reasonable knowledge of the different methods of care. Nevertheless, approximately two thirds of the professional group stated that they had no such knowledge. One explanation for this universal lack of information

may be that the various agencies involved in the care of these children failed to inform the public sufficiently of their services.

Of those who claimed that the different methods of care were publicised adequately, 9% in Ibadan and 68% in Ilora obtained their information from neighbours. Ilora is a rural community where people mix freely and discuss problems together. On the other hand, Ibadan is an urban community where there is a tendency for neighbours not to engage in discussing personal problems. 35% of the respondents in Ibadan and 4% in Ilora obtained their information from news media including television, radio and newspapers. The Ilora people are relatively poorer than the Ibadan people and cannot afford to buy television and radio sets and most are illiterate and are unable to obtain information from newspapers. It is not surprising therefore that only 4% of the people in Ilora but 35% in Ibadan obtained their information through television, radio and newspapers.

Another factor considered was the acceptance of abandoned children in relation to existing family size. The results obtained are not clear cut although it seems that the largest proportion of families willing to accept abandoned children were themselves childless. Families with one or more children were less willing to accept these motherless babies and various reasons were given most of which can be explained on the basis of culture, ignorance, poverty or fear of the unknown. The majority of the people in Nigeria can barely sustain their families on the present poor income and could therefore not take on any added responsibility. Although adoption was favoured by many who would accept abandoned motherless babies, it is not socially accepted as it is alien to the Nigerian culture. In the olden days, the greatness of a man was partly measured by the number of his wives and children and these children, especially the male-born, served as social and economic security to the parents in their old age. A barren wife thus became unpopular within the extended family and might in accordance with the native law and custom be divorced.

Adoption to most people is therefore an open acceptance of their own failure to bear children. Moreover, ignorance in the care of babies is a big factor in Nigeria in contributing to the high infant mortality and therefore death occurring in a child whose parents are unknown may cause a local scandal.

In placement preference, analysis of the various responses shows that people in Ilora preferred a motherless child to be cared for within his or her own family unit. In Ilora, the health centre provides for the organised care of motherless babies within the extended family and thus Ilora people have been brought up to appreciate family unit care. Moreover in such a rural community, family ties are still strong and any attempts to break them by taking the child away from its own background would be resented. Institutionalization was most favoured in Ibadan and is there already the most established method of organised care of motherless babies. Apart from this, Ibadan is essentially an urban community where people are moving away from the old traditional way of keeping the family together and may be an added reason why the Ibadan

people preferred the method of institutional care unlike that of family care in Ilora.

Summary

An opinion survey carried out in Ibadan, an urban community, and in Ilora, a rural community, shows that the problems involved in the care of motherless babies were not publicised sufficiently, and that the public were for the most part unaware of the various methods of care.

The majority of people would not accept abandoned motherless babies into their homes and those willing to do so were mostly childless families and they preferred adoption to fostering. The type of placement preferred seemed to be influenced by the existing form of organised care in the respective locality and also by the concept of the family as a social institution.

PART THREE - EVALUATION

CHAPTER IX - DISCUSSION

CHAPTER X - RECOMMENDATIONS

- CONCLUSION

- ACKNOWLEDGEMENTS

- REFERENCES

CHAPTER IXDISCUSSION

Although a vast amount of information is available in the literature of other parts of the world on the care of babies deprived of normal maternal care, in Nigeria, very little has been written on the subject. Considering the high child mortality in Nigeria, one appreciates that the care of the child with a normal family background still constitutes a major problem and it is therefore not unexpected that little attention has been paid to motherless babies. The present study examined the infant and maternal mortality in relation to existing medical and social services. It has revealed that the care of motherless babies in our community, even those in residential care poses a number of problems. The traditional extended family-practice which has up till now attempted to cope with these children was against a background of poverty, ignorance, cultural beliefs and practices. In addition although voluntary organizations for the past two decades have played an important but very difficult and limited role they have done so under great financial strain, and with little support from the

government and the community.

The foregoing study in its various aspects has disclosed some important facts about motherless babies in institutions in foster homes and those living with their families.

1. Motherless babies in institutions

(a) Placement of children

Placement of children in institutions is carried out without standardized assessment of their needs or a consideration of their socio-economic and cultural background. Little or no information is collected about the child before admission and thereafter no positive effort is made to maintain contact with the child's home whilst in care or after discharge. This results in unsuitable placement in institutions, absence of stable family contacts and often unnecessary prolonged stay or even abandonment in the institution.

(b) Staff

As almost all the children who come into care do so on a long term basis, a highly skilled

staff with adequate knowledge of their physical and emotional needs is essential. Unfortunately, there is an acute shortage of all trained child care staff. Long hours, poor salaries, and lack of suitable living-in accommodation are responsible for a high rate of staff turnover with consequent discontinuity of care and lack of satisfactory adult-child relationship. Thus suitable and well motivated people are not attracted to this work.

(c) Attitude of governing committees of institutions

Examination of the activities of the various institution committees shows that they work independently, and in fact there is an air of rivalry amongst them, all jealously guarding their own schemes. These committees are so satisfied with their solution of immediate problems in the care of motherless babies that little attention is paid to any other scheme which might be more beneficial. An example of this occurred in the present study. A boy estimated to be about two years old was found in the emergency room of a hospital abandoned by his

mother who had brought him there for treatment. The child was referred to the nearest home for motherless babies where he was admitted by the matron and as an abandoned child he would continue to live in the socially impoverished atmosphere there. One could ask if the committee of this particular home could not have investigated the possibility of a better line of care than life in an institution. This is the kind of question which should engage the minds of those actively involved with the short or long-term care of such children.

(d) Attitude of the community

This study revealed that the ordinary citizen even knows or cares very little about children in care, nor is the professional man much better informed. Yet it is essential for preventive work in this field and for good management of these institutions that the community understands the problems involved in the care of these children. To stimulate recruitment of volunteers, foster

parents, prospective adopters and staff and to promote fund raising activities, such an awareness is important, and to maintain public interest there must be periodical feed-back of information from the institution to the community.

(e) Cost of care

It costs almost nine times as much in an institution and five times as much in a foster home as it does to keep a child in its own home.

Parents of children in residential care are relatively poor and cannot be expected to make any substantial contribution to their upkeep.

The institutions largely depend on charity and donations from government sources and the inadequacy of funds is reflected for example in the inability to employ skilled workers even on a part time basis.

(f) Effects of institutional care

It has been shown in a previous chapter, which considered the mental development of these children that the longer a child stays in an institution, the more mentally retarded he becomes. Moreover the mortality rate is greater

among motherless babies in institutions than in those living with their families or in foster homes. These findings are not unrelated to the standards of residential care which is closely linked with the quality of staff. In Lagos Home there was a higher standard of staff care and supervision and thus the physical, mental and social development of the motherless babies there compared favourably with those of motherless babies living with their families.

2. Motherless babies in foster homes

(a) Recruitment of and placement with foster parents

Boarding out of motherless babies is the least developed and poorly organised form of care in Nigeria although elsewhere this is usually considered the most suitable method of care for abandoned children. There are no uniform standards for the selection of foster parents and the few who come forward are incorporated into the scheme without much investigation of their temperament, their social, or medical history or of their motivation. Because of the acute shortage of prospective foster parents, children are boarded out on the

basis of willingness rather than suitability to act as foster parents and this sometimes results in three or four children of the same age group being cared for in the same family. Moreover because of the scarcity of good foster parents, child-care officers tend not to be too critical of the services given even when the quality falls below standard.

(b) Cost of care in foster homes

Although it costs less to care for a child in a foster home than in an institution, the governmental and local council authorities often default in their payments to foster parents and this can impair further the quality of care.

3. Motherless babies living with their families

It has been shown in this study that motherless babies living with their own relatives but also receiving care and supervision from some of the special organisations have advantages over those who live in institutions and foster homes. Such advantages manifest themselves in higher scores on intelligence

tests, better emotional, social and physical development, and a relatively lower mortality. An adequate and happy home environment where love and affection are readily given and where the children can have as normal an upbringing as those more privileged children who have both parents contributes to these effects. Some of these children, however, are faced with problems differing from those of children in institutions and foster homes, problems based on poverty and cultural beliefs and practices which are not always easily resolved.

Further advantages of care within the family structure are that capital expenditure on buildings and services and the employment of highly trained staff are not required.

RECOMMENDATIONS

"The prime requisite for intelligent action in any situation is knowledge of the facts, and most important, awareness of those aspects of the situation which are still unknown or unclear" - Joseph H. Reid, 1959.

This study, the first of its kind in Nigeria, attempts to examine various aspects of the care of motherless babies. Despite limitations through inadequacy of records and other difficulties, nevertheless the study has produced much information on which both general and specific recommendations for future action and research might be based.

A. General Recommendations

1. Finance

Many of the recommendations if implemented must inevitably cause increased expenditure. It is suggested that the cost of financing them should be met partly by the appropriate central department, the Ministry of Economic Planning and Social Welfare, and partly by the individual agency or organisation concerned.

which would apart from other sources of income require a considerable increase in their current annual governmental grants.

2. Prevention of maternal deaths

It has been shown (Table 60) that the most important single cause of mother-child separation is maternal death due to obstetric causes. There is therefore a great need to improve the standards of antenatal, natal and post-natal care. Health talks should be given regularly in the maternity and child-welfare centres and the topics should include family planning, nutrition and personal health and hygiene. The adverse effects on pregnancy, confinement and post-natal care of practices arising out of some of the cultural beliefs should be counteracted. Specific efforts should be made to reach expectant mothers as soon as possible especially those living in remote parts and the importance of pre-natal care and adequate rest needs to be carefully explained to them and to their husbands.

One of the principal obstetrical causes of maternal death is post-partum haemorrhage and yet few of the

hospitals and no maternity and child welfare centres have facilities for dealing with this emergency. These transfusion and specialist facilities must be provided in each of the eight health districts in the Western State.

3. Registration

There is need for an awareness by government and equally by the community of the nature and magnitude of the problems involved in the care of motherless babies since they have to determine priorities and provide the necessary funds. Annual reports from hospitals and maternity and child welfare centres etc. should include information about the number of motherless babies encountered. Comprehensive registration of motherless babies in Nigeria in present circumstances is still an impossibility in view of the shortage of manpower, finance and of other medical and social priorities but an approximation of the extent of the problem should be attempted. For this registration and collection and analysis of all relevant data are prime necessities.

4. Coordination of services

There should be greater coordination between all

services concerned with the care of motherless babies. A special committee consisting of government officials, representatives of the different voluntary and religious organizations and members of the public should be formed to investigate current problems and deficiencies to assess the progress and after care of these children and to make appropriate recommendations to the respective organizations involved in their care. The government should exercise overall control of the services and lay down standards of placement and care for the children and in the recruitment and payment of staff.

5. Propaganda

Every effort should be made to encourage at all levels community participation. Public awareness should be cultivated by all possible means of mass communication using rediffusion, radio and newspapers. All agencies and other organizations actively involved in the care of motherless babies should attempt to identify those sectors of the community likely to be responsive to the children's needs and problems.

Fund raising activities by these organizations should be a joint effort and a "Motherless Babies Fund raising week" which does not coincide with any national festival period or holiday should be held yearly. This should make a greater impact than the present method by which each organization concerned carries out its individual fund raising. Any funds thus raised should be made available to promote the care of all known motherless babies.

6. Adoption

It is a fallacy to state that adoption is alien to the Nigerian culture as the practice has never been seriously considered nor has it ever been subject to any pilot experiment to test its efficacy. With increased urbanization, more children will be abandoned. The time appears ripe for serious consideration to be given to the introduction of adoption laws, as in other countries, which will allow abandoned children a permanent family home and life in Nigerian society with their adoptive parents. Such a measure must however be preceded by carefully planned research into the community attitude to adoption in all its varied facets.

B. Specific Recommendations

The specific recommendations are now given in relation to the three existing methods of care:-

(1) Motherless babies and family care; (2) Motherless babies and foster home care; (3) Motherless babies and institutional care.

1. Motherless babies and family care

Families should be encouraged to care for motherless babies in their own homes. In the area served by each maternity and child welfare centre, special care and supervision of such motherless babies should be incorporated into the normal routine duties of the staff of that centre. This has been successfully practised in Ilora by the staff of the Ilora Health Centre and should be introduced into all other health centres. The children should be brought to these centres for routine medical care and at the centres, particular emphasis could be given to the following items:-

(1) Health education

This is a vast subject but could include instruction in the following topics:-
environmental hygiene, mothercraft, value of

immunization against infectious diseases especially measles, prevention and early management of diarrhoea in children, first aid treatment of common diseases such as malaria and convulsions and the avoidance of potentially harmful cultural practices such as scarification of the skin which may lead to infection with tetanus. Appropriate visual aids should be selected to interest and convince the mothers.

(ii) Nutritional education

Apart from the health education aspects of food hygiene, topics such as the risk of infection from bottle feeding should be stressed and the methods of preparation of artificial feeds in small bowls and of subsequent spoon feeding should be demonstrated. It is important that mothers should be instructed in the correct use of milk supplements. Most motherless babies come from poor families/and as artificial feeding may prove expensive, dried powdered milk should be routinely supplied in the first year of life during which time the child may be gradually weaned to the native diet.

The substitute mothers must be taught the nutritive values of local foods and the using of herb preparations which are irritants to the delicate intestinal linings. Organized cooking demonstrations with group feeding of the children should be held periodically each week. Such nutritional education involving the active cooperation of substitute mothers is currently and successfully practiced by the staff of the Ilora Health Centre (Fig. 61) and elsewhere.

(iii) Home supervision

To maintain their interest and to keep a check on their personal and environmental hygiene, the substitute mothers need to be supervised in their own homes. Opportunity can also be taken by home supervision to persuade defaulters to attend the clinics regularly with the children. A member of staff of the health centre, preferably female, a local person who is familiar with the dialect and the cultural beliefs and practices of the people of that particular area should be assigned specially for this home supervision.

**Fig. 61. A GRANDMOTHER SPOON-FEEDING A
MOTHERLESS BABY DURING A
NUTRITIONAL SESSION IN ILORA
HEALTH CENTRE.**



She need not be a highly qualified nurse but must be familiar with local dialect and customs and have received training in child care, nutritional problems and social work and should be able also to detect families who should be given supportive financial assistance.

2. Motherless babies and foster home care

(1) Expansion of services

The fostering-out services of the Ministry of Economic Planning and Social Welfare and of the voluntary organizations need to be greatly expanded. Most of their activities are still concentrated in Ibadan and it is recommended that the system of fostering-out should be expanded throughout the Western State. To promote this, full use should be made of information and publicity services and an educational campaign on the child care services with special emphasis on the system of fostering out should be organised regularly.

(ii) Registration

A register of all children fostered out in each local council area must be kept and adequate

arrangements made for periodic supervision.

(iii) Recruitment

It is difficult to judge the character or motivation of foster parents except by intensive case work based on several interviews by a child care officer. The following recommendations are made regarding recruitment of foster parents in the context of conditions in Nigeria. They should preferably be Nigerians over 21 years of age and preferably middle aged women with experience in child care. Foster mothers should not be engaged in outside work and a married woman living with her husband is most suitable. Both should be interviewed by the child care officer. Not more than one child should be fostered out to a family with two or more young children and no more than two at any one time to a prospective foster parent who is childless or has a grown-up family.

In the study, many of the foster parents had a minimum education and as this may affect their entire outlook to the children in their charge, at least a primary school educational level

should be obligatory. The interviews should allow the motivation, temperament and disposition of the prospective foster parents to be assessed as well as their standards of personal and environmental hygiene and the suitability of their homes for foster children.

(iv) Training and supervision

Foster parents should be given basic instruction to understand the special needs of these children and a foster parents' association could be formed to provide opportunities for exchanging views and sharing problems.

The standards required in fostering must be uniformly maintained and call for trained social workers with small case loads. Any social worker in Nigeria, as compared with her counterpart in the developed countries, has difficulty in carrying out her duties since the people there are at best un-informed, roads are bad and transport poor. Social workers should be provided with some means of transport and the number of foster homes in their charge such as they can adequately supervise.

(v) Medical care

All foster parents must be advised to bring their foster children to the appropriate child welfare centre for medical care and periodic medical examination.

(vi) Coordination

There should be much greater contact between institutions and foster homes on an organised basis to determine the most effective placement for any abandoned child and to prevent any unnecessary long term placement.

3. Motherless babies and institutional care

This study reveals that motherless babies are best cared for in their own homes. There will however be children who cannot live there either because they have been abandoned or because there is no one within the family to care for them. These children will need permanent care, the type of which must depend on their needs and the services available. The fact that good foster homes are better and cheaper than institutions needs no emphasis, but as already shown they are few in number and the quality and

motivation of foster parents are often doubtful. For these and other reasons including the reception of emergency cases and of those awaiting long term placement, institutions at least in the foreseeable future will have to co-exist with other methods of care.

This study compares three individual institutions. The findings reveal that in the one home in which there was greater individual care and orientation of staff to the physical and psychological needs of the children, their mental, physical and social development compared favourably with those of children living at home. Given a suitable environment, institutionalization is a reasonable form of substitute care preferably on a short term basis. The following specific recommendations are made in respect of the institutional care of motherless babies.

(i) (i) Registration and supervision
REGISTRATION AND SUPERVISION

Licensing of all motherless babies homes by the central government department is essential and should be subject to annual review. An accurate register and other relevant records should be kept of all admissions.

(ii) Community involvement

To arouse interest and to stimulate recruitment, due publicity should be given to the purpose and work of the homes by means of radio, television and press. To encourage active participation by the community in the administration of the homes, committee members should be recruited from a cross-section of the community and only those likely to give adequate time and serious attention to the activities of the home should be appointed.

(iii) Recruitment and training of staff

The methods of recruitment and appointment of staff need considerable improvement and their level of educational attainment should be that of the West African School Leaving Certificate standard. A national training programme should be established and students who are successful in this course should receive a nationally recognised certificate. Matrons of homes in addition to holding this certificate should be state registered nurses. Apart from the above for those assistants with low educational background and whose main work is of a routine nature, local in-service training courses should be organised covering the basic elements of

child care and hygiene.

(iv) Conditions of service for staff

Salaries must be sufficient and reviewed periodically to attract and maintain suitable staff. The matron or any other senior member of staff should be resident and accommodation provided also for those members of staff who wish to live in. There should be adequate arrangements for off duty time and annual leave periods uniform and should be increased.

(v) General and medical supervision and care

Each admission to a residential home must be regarded as a short-term measure and efforts made by intensive case work to settle the child to his own home or to a foster home.

Standard medical or other records should be adopted for children in residential care. Admission and progress forms, devised by the author, which may be used in the homes are shown in Appendix F. Standard weight charts and immunization schedules should similarly be adopted. Professional persons such as doctors, nutritionists and psychologists on a voluntary

basis should be recruited for service.

A trained social worker should be employed to provide a link between the home and the children's relatives and to encourage regular visits. More intensive care should be given to the babies especially as the study reveals that the first six months of life is the most critical period. It is also of paramount importance that relatives must be taught the art of feeding and caring for any baby before discharge home. To this end, accommodation should be provided for relatives to live in for a short period to obtain such training. Suitable toys for the different age groups should be provided and the older children allowed to play outdoors.

In Great Britain, small separate homes with accommodation for six to eight children are currently advocated and provide a satisfactory home life for deprived children. According to the Government report, **Children in care in England and Wales 1970**, it costs £17 to £18 weekly for each child in a local authority home in Great Britain. This method of care for financial and other reasons cannot unfortunately be advocated in the Nigerian setting at present.

CONCLUSION:

This study attempts to analyse many aspects of the care of motherless babies and to uncover their problems and needs. Some of these are capable of solution through improved central and local government measures, supported by adequate financial and staffing resources and increased community involvements. It is evident that motherless babies in institutions have not the same opportunities as those living in their own homes, and thus supportive measures to families should aim to reduce the number placed in institutions. The fostering out services require to be strengthened and developed to enable them to provide a suitable alternative home environment, and every support should also be given to relatives who have accepted the responsibility of caring for motherless children of their own family.

It is realised that, considering the social and other needs of Nigeria, the recommendations made may not obtain immediate priority, but according to Reid (1959) "Children need what they need when they need it. Providing it later is always too late."

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CARE OF MOTHERLESS BABIES IN NIGERIA

THESIS

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APPENDIX A

List^{of}_A Tables Pages i - vi

Tables 1 - 72 Pages 1 - 92

CONTENTS

VOLUME II

- APPENDICES
- A. Tables 1 - 72
 - B. Extracts from Separates of the Laws of Western Nigeria
 - C. Questionnaire for collecting data on the child
 - D. Child's progress sheet used in the prospective study
 - E. Questionnaire for the community opinion surveys.
 - F. Suggested proformas for use in motherless babies' institutions
 - G. Figures 17 - 52 : Graphs of heights and weights of motherless babies in different groups and of children in the control groups
-

APPENDIX A.

Table

LIST OF TABLES

1. Infant mortality rates from 1920-1963 in 13 selected countries.
2. Infant mortality rate in rural areas of Nyamwezi from 1941 to 1952.
3. Infant mortality rates in parts of Gambia, 1953.
4. Mortality in children up to five years of age.
5. Major causes of death among children in Igbo-Ora in the various age groups.
6. Neonatal, infantile and child mortality up to four years of age in rural areas of West Africa.
7. Trend in maternal mortality from obstetric conditions in University College Hospital, Ibadan 1958-1968.
8. Wesley Guild Hospital, Ilesha 1958-1968:
Trend in maternal mortality from obstetric conditions.
9. Maternal death rates per 1000 live births in some countries.
10. Maternal mortality per 100,000 females in some selected countries between 1960-1965.
11. Per capita income figures in selected countries at January, 1969.
12. Number of medical institutions in the Western State, by type 1948-1968.
13. Federal territory of Lagos - Ten leading causes of death in 15-44 year age group (both sexes).
14. Recorded maternal deaths in Lagos (1968)

Appendix A

Table

15. Obstetric causes of maternal death in University College Hospital, Ibadan 1957-1960.
16. Regional population distribution in Nigeria.
17. Population by religion, Western Nigeria.
18. Labour force by major occupational group, Western Nigeria.
19. Educational facilities in the Western Region in 1959 and 1963.
20. Medical institutions by ownership in Western State of Nigeria 1969.
21. Number of hospital beds and cots in Western State of Nigeria, 1967.
22. Distribution of doctors in Nigeria.
23. Medical and public health staff per population.
24. Nurses and midwives trained in hospitals in Western State of Nigeria 1969.
- 25a. Age distribution of motherless babies in the various groups and of children in the control groups.
- 25b. Details of abbreviations of the various groups of motherless babies and children in the control groups.
26. Characteristics of foster parents.
27. Characteristics of nurses in institutions.
28. Average annual income of various occupational groups in the Western State 1968/1969.
29. Mortality among groups of motherless babies over varied periods of time to September 1969 (Retrospective Study).
30. Mortality by age (in months) (Retrospective Study).

Appendix A

Table

31. Major causes of death among motherless babies (Retrospective Study).
32. Comparative mortality in groups of motherless babies between October 1969 and March 1971 (Prospective Study)
33. Mortality experience in relation to length of stay in Ibadan Home from October 1969 to March 1971. (Prospective Study)
34. Mortality experience in relation to age in Ibadan Home between October 1969 and March 1971 (Prospective Study)
35. Analysis of deaths by cause among Ibadan Home motherless babies (Prospective Study)
36. Age distribution of motherless babies in the various groups.
37. Percentage of children in each group with various physical signs on general clinical examinations.
38. Heights of various groups of motherless babies and children in the control groups as compared with 50th percentile of Morley's height standard (1968)
39. Weights of various groups of motherless babies and children in the control groups as compared with 50th percentile of Morley's weight Standard (1968)
40. The percentage of children in each group with liver or spleen enlargement.
41. Packed cell volume estimations in all groups.
42. Haemoglobin level below which anaemia can be said to exist, and associated packed cell volumes (PCV%) found in iron deficiency anaemia.
43. Percent haemoglobin genotype distribution among groups of motherless babies.

Appendix A

Table

44. Percentage of children in each group with positive slides for malaria parasites.
45. Results of routine examination of urine of all groups.
46. Incidence of helminthic infections for the various groups.
47. Table showing crude parasite rates (%) and packed cell volume (%) in various groups.
48. Mean and standard error of the mean of ages of groups of motherless babies and the controls.
49. Median, overall median and Chi-Square values of scores of children aged 0-2 years on the locomotor sub-scale of the Griffith's Baby test.
50. Median, overall median and Chi-Square values of scores of children aged 0-2 years on the personal-social sub-scale of the Griffith's Baby Test.
51. Median, overall median and Chi-Square values of scores of children aged 0-2 years on the hearing and speech sub-scale of the Griffith's Baby Test.
52. Median, overall median and Chi-Square values of scores of children aged 0-2 years on the eye and hand Sub-scale of the Griffith's Baby Test.
53. Median, overall median and Chi-Square value of scores of children aged 0-2 years on the performance Sub-scale of the Griffith's Baby Test.
54. Coefficient of concordance among the five variables.
55. Median, overall median and Chi-Square values of Intelligence Quotient scores of children aged 0-2 years.

Appendix A

Table

56. Median, overall median and Chi-Square values of the Intelligent Quotient Scores of children aged 2-5 years.
57. Unadjusted means and Standard Error and the correlation between length of stay in weeks (X) and score (Y)
58. Comparative scores on Griffith's Baby Test.
59. The number and causes of maternal deaths occurring each week since childbirth.
60. Causes of separation of mother from child.
61. Classification of the occupations of fathers of motherless babies in the various groups.
62. Frequency of visits by relatives.
63. Relative frequency of visits of institution children by relatives in relation to distance of family home to institution.
64. Cost of care of motherless babies in institutions, foster homes and family homes.
65. Population distribution and number of family compounds or houses in the areas in Ibadan of the community opinion survey.
66. Knowledge of the different methods of care of motherless babies according to occupational group in Ibadan.
67. Knowledge of different methods of care of motherless babies according to occupational group in Ilora.
68. Sources of information as regards the various methods of care.
69. Acceptance of abandoned motherless babies according to family size in Ibadan.

Appendix A

Table

70. Acceptance of abandoned motherless babies according to family size in Ilora.
71. Reasons for non-acceptance of abandoned motherless babies.
72. Placement preference according to locality.

TABLE 1.

Infant Mortality Rates from 1920-1963 in 13 selected countries (Rates are number of deaths of Infants under 1 year of age/1000/live births). Data exclude Foetal deaths

Civil Registration data said to be relatively complete are coded "C". Those said to be unreliable (incomplete) are coded "U"

Country	1920-1924	1925-1929	1930-1934	1935-1939	1945-1949	1950-1954	1955-1959	1960	1961	1962	1963
AFRICA											
Ghana (Registration Area)	....	....	....	....	120.8	119.0	98.3	113.1	96.1	86.5	82.3
Nigeria (Lagos only)	....	....	....	....	113.3	87.3	78.3	62.9	81.0	62.0	67.8
Sierra-Leone	....	....	....	....	184.7	141.1	141.1	126.2	148.0	131.5	121.4
AMERICA											
United States*	16.7	69.0	60.4	53.2	33.3	28.1	26.4	26.0	25.3	25.3	25.2
Canada	104.3	93.8	78.6	67.3	46.6	37.0	30.5	27.3	27.2	27.6	26.3
Chile	266.4	233.2	244.0	240.6	149.6	128.0	116.8	127.1	116.6	114.6	111.0
ASIA											
India (Registration Area)	184.2	175.3	176.2	132.7	118.9	97.3	86.5	83.1	81.0	77.6	72.8
Ceylon	192.3	174.0	165.1	181.6	110.5	77.0	65.4	56.8	52.1	52.8	55.8
Japan	164.7	140.8	124.2	110.4	66.9	52.7	37.7	30.7	28.6	26.5	23.2
EUROPE											
Sweden	61.4	57.7	51.9	43.2	25.7	20.0	17.0	16.6	15.8	15.3	15.0
Scotland	92.0	81.0	82.0	75.5	50.5	34.6	28.7	26.4	25.8	26.5	25.6
England & Wales	77.1	70.9	62.7	55.3	39.4	27.9	23.2	21.8	21.6	21.7	20.9
Spain	148.2	127.0	118.0	124.5	80.5	62.5	51.6	43.7	46.2	41.1	40.7

* Prior to 1933, both birth and death registration states only; by 1932, these states include 90% of the total population.

Source: Demographic Year Book (1954) pp. 588-596
(1963) pp. 522-534)
(1965) pp. 722-728)

TABLE 2.

Infant Mortality Rate in Rural Areas of Nyamwezi from 1941 to 1952

Year	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	Total
Births	201	199	233	163	194	202	268	248	231	158	204	233	2534
Deaths under 1 year	70	92	88	74	70	68	60	36	35	42	74	73	782
I.M.R.	348	462	378	454	361	337	224	145	151	266	363	313	308

Source: Nhonoli A. M. M. "An Enquiry into Infant Mortality Rate in Rural Areas of Nyamwezi" E.Afr.Med.J. Vol. 131 No. 1, 1954.

TABLE 3Infant Mortality Rates in Parts of Gambia, 1953

<u>Village</u>	<u>Rate per 1000 live- births</u>
1. Depressed village (Kerewan)	525
2. Group of villages (trained nurses available)	207
3. Primitive village (Keneba)	462
Same village after introduction of anti-malaria measures but with acute food shortage	351
4. Another village with adequate food supply	166

Source: B.S. Platt: "Food and Production" in A. Leslie Banks (ed) The development of Tropical and Subtropical Countries with particular reference to Africa (London Arnold, 1954), pp. 107.

TABLE 4MORTALITY IN CHILDREN UP TO FIVE YEARS OF AGE

	Imesi before 1957	England & Wales 1950	Ratio Imesi/ E & W
Still - birth rate (/1000 total births)	40.8	23	2 : 1
Noonatal deaths (/1000 live births)	104.59	19	5 : 1
Infant Mortality (/1000 live births)	295.4	30	10: 1
1 - 4 year deaths (/1000 living children aged 1 - 4)	277.2	1.1	250: 1

Source: Morley, D.C. (1963). Trans R. Soc.
trop. Med. Hyg. 57: 82.

TABLE 5.

Major causes of death among children in Igbo-Ora in the various Age Groups

	0-1 yr	1-2 yr	2-3 yr	Over 3yr	Unknown	Total
Measles	7	31	8	2	-	48
Fever, Fever & Convulsion	19	18	9	-	-	46
Diarrhoea	19	14	-	-	-	33
Cough	8	12	4	-	1	25
Malnutrition	5	1	2	-	-	8
Hydrocephalus	1	-	-	-	-	1
In neonatal period	26	-	-	-	-	26
Unknown	7	9	4	-	2	22
T O T A L	92	85	27	2	3	209

Source: Wennen - Van Der Mey. C.A.M.A. (1968).
A longitudinal study of children at Igbo-Ora.
Trop.Geogr.Med. 20., 335.

TABLE 6.

Neonatal, Infantile and Child Mortality up to
four years of age in rural areas of West
Africa

	Neonatal Rate/1000	Infantile Rate/1000	Child (3 months to 4 yrs.) Rate/1000
Akufo	50	109	430
Imesi	78	114	572
Gambia	54	134	400
Senegal	-	172	344
Guinea	-	217	415

Source:

Akufo: An environmental
study of Nigerian village
community by H.M. Gilles
(1964) pp.73.

TABLE 7

Trend in Maternal Mortality from
Obstetric Conditions in University College Hospital
Ibadan. 1958 - 1968

YEAR	NUMBER OF DELIVERIES IN HOSPITAL			MATERNAL DEATHS			MATERNAL MORTALITY 1000 DELIVERIES IN HOSPITAL		
	B	E	T	B	E	T	B	E	T
1958	770	290	1060	1	29	30	1.3	100.0	28.3
1959	1154	394	1548	9	22	31	7.8	55.8	20.0
1960	358	1700	2058	10	29	39	27.9	17.1	19.6
1961	324	1714	2038	7	33	40	21.6	19.3	19.6
1962	289	1664	1953	7	33	40	24.2	19.8	20.5
1963	275	1665	1940	3	17	20	10.9	10.2	10.3
1964	360	1708	2068	4	26	30	11.1	21.1	14.5
1965	405	1770	2175	2	16	18	4.9	9.0	8.3
1966	358	1701	2059	5	17	22	14.0	10.0	10.7
1967	254	1700	1954	5	23	28	19.7	13.5	14.3
1968	381	1700	2081	4	26	30	10.5	15.3	14.4
	4928	16006	20934	57	271	328	11.6	16.9	15.7

Source: University College Hospital Medical Records.

B = Booked cases

E = Emergency cases

T = Total

TABLE 8

Wesley Guild Hospital, Ilesha 1958-1968: Trend in
Maternal Mortality from Obstetric Conditions.

Year	Total Births (Live and Still)	Maternal Deaths	Maternal Mortality per 1000 deliveries
1958	1,027	5	4.9
1960	1,494	3	2
1962	1,271	13	10
1964	-	-	-
1966	1,232	19	15.4
1968	1,140	12	11

Source: Wesley Guild Hospital (Bi-annual
Report)

TABLE 9MATERNAL DEATH RATES PER 1000 LIVE BIRTHS IN SOME COUNTRIES

Country	1951-1953	1961-1963	1965	1966
Mauritius	3.1	1.5	0.8	1.1
Canada	0.9	0.4	0.3	0.3
United States	0.7	0.4	0.3	0.3
Hong Kong	1.3	0.4	0.3	0.4
France	0.8	0.4	0.3	0.3
United Kingdom (England & Wales)	0.8	0.3	0.3	0.3
United Kingdom (Scotland)	1.0	0.4	0.4	0.2

Source: World health statistics report.
Vol. 22, No. 6, 1969.

TABLE 10

Maternal Mortality per 100,000 females in some selected countries between 1960 - 1965

Countries	1960	1961	1962	1963	1964	1965
<u>AFRICA</u>						
Mauritius	14.3	9.9	12.1	11.7	11.4	6.0
Nigeria (Lagos)	....	44.9	38.3	....	....	...
<u>AMERICA</u>						
Chile	21.0	21.5	19.0	17.5	16.8	...
Canada	2.4	2.4	2.1	1.8	1.4	1.4
United States	1.7	1.7	1.6	1.5	1.4	1.2
<u>ASIA</u>						
Phillipines	11.6	9.7	9.2	11.6	....	...
JAPAN	4.4	4.0	3.7	3.5	3.4	3.1
Singapore	3.0	2.8	2.5	2.7	1.3	...
<u>EUROPE</u>						
Denmark	1.0	0.7	0.7	0.9	0.5	0.5
France	1.8	1.6	1.5	1.4	1.1	1.1
Sweden	1.0	0.6	0.4	0.8	0.6	0.4
Scotland	1.3	1.4	1.6	1.4	0.9	1.4
England & Wales	1.3	1.1	1.2	1.0	0.9	0.9

Source: Demographic Year Book (United Nations, 1968)

TABLE 11

Per Capita Income Figures in Selected Countries at
January, 1969.

Country	Per Capita Income	Country	Per Capita Income
United States	£1,322	Ghana	£119
Sweden	£1,000	Ivory Coast	£90
Canada	£830	Liberia	£61
Denmark	£758	Senegal	£58
France	£647	Sierra-Leone	£53
Britain	£636	Nigeria	£31
U.S.S.R.	£604	Mali	£27
		Upper Volta	£18

Sources:

These figures were compiled from Daily Mirror's State of the World supplement of January, 1969 and the UN Year Book of National Accounts Statistics.

TABLE 12PUBLIC HEALTH

Number of Medical Institutions in the Western State,
by TYPE, 1948 - 1968

As at 31st December	Hospitals and Nursing Homes	Maternity & Child Welfare Centres	Dispensaries	Dental Centres
1948	19	78	164	-
1949	20	89	180	-
1950	22	103	200	-
1951	25	116	213	-
1952	30	132	226	2
1953	30	153	140	2
1954	37	167	257	2
1955	39	184	269	2
1956	42	203	284	2
1957	48	238	309	6
1958	59	298	358	6
1959	59	337	411	6
1960	58	385	458	6
1961	60	408	524	6
1962	41	327	403	4
1963	40	328	400	7
1964	39	352	429	7
1965	39	355	448	7
1966	39	365	460	8
1967	42	331	423	7
1968	45	352	438	7

Notes: 1. 1948-1961 figures include those of the Mid-Western State.

2. 1948-1966 figures include those of the former Colony Province of Western Nigeria.

Source: Western State of Nigeria
Statistical Abstract
1969.

TABLE 13.Federal Territory of LagosTen leading causes of death in 15 - 44 year age group (both sexes)

<u>GROUPS</u>	<u>PER CENT</u>
All causes 15-44 year	<u>100</u>
1. Maternity causes	13.6
2. Traffic accidents	9.7
3. Pneumonia and Bronchitis	8.8
4. Dysentary	7.6
5. Tuberculosis	5.7
6. Tumours	5.3
7. Hypertension	4.4
8. Heart disease	2.5
9. Malaria	2.5
10. Vascular lesion of Brain	2.1
11. all other causes	37.8

Source: Federal Ministry of Health
Statistics, Lagos (1970).

TABLE 14.Recorded Maternal Deaths in Lagos (1968)

	<u>by causes</u>
Severe Anaemia	16
Postpartum Haemorrhage	10
Puerperal Sepsis	10
Ruptured Uterus	9
Septic abortion	9
Cardiac Failure	8
Antepartum Haemorrhage	8
Septicaemia	7
Abortion	7
Ectopic Pregnancy	4
Lobar Pneumonia	4
Hepatic Failure	2
Others	47
	<hr/>
Total Obstetric deaths =	<u>141</u>

Source: Annual report of the Medical Officer of
Health for Lagos, 1968.

TABLE 15.Obstetric causes of Maternal death in University College
Hospital, Ibadan, 1957 - 1960

Anaemia of Pregnancy	-	-	14
Haemoglobinopathies SC 9) SS 2)	-	-	11
Obstructed Labour:			
Uterus Unruptured 4)	-	-	
Uterus Ruptured 8)	-	-	12
Sepsis:			
Intrapartum 3)			
Puerperal 5)	-	-	10
Tetanus 2)			
Anaesthetic Causes	-	-	8
Eclampsia	-	-	6
Placenta Praevia	-	-	5
Postpartum haemorrhage	-	-	5
Fatal Sequelae of Blood Transfusion	-	-	5
Puerperal mania (Suicide)	-	-	1
Pyonephrosis (Retroverted Gravid Uterus)		-	1
Ruptured Ectopic Pregnancy	-	-	1
Postabortal haemorrhage	-	-	1
Presumed Obstetric Causes:			
Massive Hepatic Necrosis	-	-	5
Pyelonephritis	-	-	3
Pelvic Abscess in Pregnancy (? Criminal Abortion)	-	-	1
Total Obstetric Deaths			<u>89</u>

Source: Lawson, J.B. "Maternal mortality in
West Africa. Ghana Med.J., Vol. 1,
pp. 31, Dec., 1962.

TABLE 16Regional Population Distribution in Nigeria

REGIONS	1953	1963
Northern Region	17,153,000	29,758,875
Western Region	6,144,000	10,265,846
Eastern Region	7,229,000	12,394,462
Mid-west Region [*]	-	2,535,839
Lagos	277,000	665,246
	30,803,000	55,620,268

* Mid-west was created in 1963.

Note: There has been a considerable shift in population since the following figures were issued with large numbers of Yoruba, Hausa and Ibo returning to their own regions.

Source: Demographic Year Book of West Africa - 1967-1968.

The population for Nigeria was estimated in 1970 to be 64 million (Source: Dada, A.A. Babalola 1972) Vital Statistical Estimates, Ministry of Health and Social Welfare, Medical Statistic Division, Lagos State Government.

TABLE 17

Population by Religion

Western Nigeria

Religion	Total	% of Total	Males	% of Males	Females	% of Females
Christianity	4,995,692	48.7	2,619,313	49.7	2,376,379	47.6
Islam (Moslems)	4,458,531	43.4	2,291,176	43.5	2,167,355	43.4
Others	811,625	7.9	357,842	6.8	453,783	9.0
Total	10,265,848	100.0	5,268,331	100.0	4,997,517	100.0

Source: Population Census of Nigeria - 1963 Western Region Vol. 11.

TABLE 18**Labour Force by Major Occupational Group, Western Nigeria**

Major Occupation Group	Total	TOTAL	
		Male	Female
Professional, Technical and related workers	138,885	109,921	28,964
Administrative, Executive and Managerial workers	14,453	12,809	1,644
Clerical Workers	102,127	91,000	11,127
Sales workers	1,611,881	278,770	1,333,111
Farmers, Fishermen, Hunters, Loggers and related workers	1,586,888	1,476,937	109,951
Miners, Quarrymen and related workers	1,450	1,406	44
Transport and Communication workers	113,877	112,096	1,781
Craftsmen, production-process workers and labourers	785,456	582,744	202,712
Service, Sports, and recreation workers	141,980	92,462	49,518
Unspecified workers	429,346	19,338	410,008
Total employed persons	4,726,343	2,777,483	1,948,860
Unemployed persons	76,087	55,787	20,300
Total labour force	4,802,430	2,833,270	1,969,160

Source: Population Census of Nigeria 1963,
Western Region Vol. 11, pp. 150

TABLE 19

EDUCATIONAL FACILITIES IN THE WESTERN REGION
IN 1959 and 1963

Educational level	Number of Schools		Number of Pupils			
			MALE		FEMALE	
	1959	1963	1959	1963	1959	1963
Primary	6,518	6,311	665,442	643,836	414,861	455,592
Secondary	558	911	48,730	104,411	15,479	46,277
Teacher Training	98	92	8,458	9,922	2,582	3,063
Technical and Vocational	4	4	168	695	79	80

Source: Demographic Year Book for West Africa
(1967-1968)

TABLE 20

MEDICAL INSTITUTIONS BY OWNERSHIP IN WESTERN STATE OF NIGERIA

1969

Ownership	Hospitals & Nursing Homes	Infectious Diseases Hospital.	Leprosy Clinics & Segre- gation Villages	Maternity and child Welfare Centres	Rural Health Centres	Dispen- saries	Dental Cen- tres.
Western State Government	36*	4	11	1	10	3	6
Local Authorities	-	29	124	277	3	431	-
Missions	14	-	6	22	-	3	1
Private Individuals	11	-	-	62	-	3	-
Commercial & Industrial Firms	-	-	-	-	-	3	-
Statutory Board	-	-	-	-	-	5	-
TOTAL	61	33	141	362	13	448	7

* Figure includes 3 Federal Government Hospitals (1 in Abeokuta, 2 in Ibadan City)

Source: Annual Statistical Bulletin 1969, Ministry of Health, Western State of Nigeria.

TABLE 21

Number of Hospital beds and Cots in Western State of Nigeria, 1967.

Towns	Hospitals	No. of Beds	No. of Cots	Total No. of Beds and Cots
1. Abeokuta	General	146	12	158
2. Akure	General	116	20	136
3. Badagry	General	38	4	42
4. Ede	General	48	-	-
5. Epe	General	38	8	46
6. Ibadan	Adeoyo	277	-	-
7. Ibadan	Jericho Nurs- ing Home	20	6	26
8. Ibiade	General	48	-	-
9. Ido-Ekiti	General	48	-	-
10. Igbetti	General	48	-	-
11. Ijebu-Ode	General	71	54	125
12. Ikare	General	78	-	-
13. Ikeja	General	56	10	66
14. Ilaro	General	40	6	46
15. Ile-Ife	General	46	4	50
16. Ilesha	General	48	-	-
17. Iwo	General	46	9	55
18. Ogbomesho	General	54	-	-
19. Okitipupa	General	51	-	-
20. Ondo	General	45	6	51
21. Oshogbo	General	94	-	-
22. Oyo	General	74	8	82
23. Shagamu	General	76	6	82
	Total	1506	153	

Source: Hospital directory - A compilation of Medical Facilities in Nigeria
1967 by John S. Owen.

TABLE 22

Distribution of Doctors in Nigeria

Employer	Lagos	West	Mid-West	East	North	Total
Government	147	91	37	132	112	519
Local Authority	12	1	-	-	-	13
Mission	1	45	15	93	62	216
Industrial	19	-	4	16	7	46
Armed Forces	14	2	1	2	12	31
University (including Teaching Hospital)	87	171	-	4	3	265
Private Practice	53	13	5	33	10	114
W.H.O.	3	5	2	3	5	18
Miscellaneous	4	2	2	7	3	18
Total	340	330*	66	290	214	1240

* 150 (46%) of these are in Ibadan alone.

At any one time, there are between 100-150 doctors on overseas or study leave.

Source: Hospital directory
A compilation of Medical Facilities in Nigeria
by J.S. Owen, 1967.

TABLE 23MEDICAL AND PUBLIC HEALTH STAFF PER POPULATION

This shows Medical and Public Health staff per population in the Western State of Nigeria. There are:

- 1 Doctor per 36,000 people.
- 1 Pharmacist per 254,000 people.
- 1 Midwife per 8,500 people.
- 1 Nurse per 9,000 people.
- 1 Radiographer and Lab. Technician per 67,000 people.
- 1 Health Superintendent per 48,000 people
- 1 Dispensary Attendant per 16,000 people.

Source: Annual Statistical Bulletin 1969,
Ministry of Health Western State
of Nigeria.

TABLE 24

NURSES AND MIDWIVES TRAINED IN HOSPITALS IN
WESTERN STATE OF NIGERIA 1969 *

Rank	Number in Training	Number Graduated
Nurses	145	138
Midwives	233	192
Community Nurses	8	8
T o t a l	386	338

* Excluding U.C.H., Ibadan.

Source: Annual Statistical Bulletin,
 Ministry of Health,
 Western State of Nigeria,
 1969.

TABLE 25a

Age distribution of motherless babies in the
various groups and of children in the control
groups

	Groups*	Age range in months					Total Number
		0-12	13-24	25-36	37-48	49-60	
Study Groups	IBHMB	30	18	4	1	-	53
	LHMB	14	14	1	1	-	30
	KCH	15	9	3	-	-	27
	IFC	11	6	5	4	4	30
	SCF	1	5	8	4	2	20
	ILMB	6	2	12	6	4	30
	MBLWR	10	3	5	11	8	37
Control Groups	ILGG	32	17	3	6	2	60
	IBCG	29	19	17	10	5	80
	Total	148	93	58	43	25	367

* See Table 25b for details of abbreviations.

TABLE 25b

Details of abbreviations of the various groups of
motherless babies and children in the control groups

Groups with their abbreviations

STUDY	Motherless babies living in institutions	)	IBHMB = Ibadan Home Motherless babies
		{	LHMB = Lagos Home Motherless babies
GROUPS		(	KCH = Kersey Children Home Motherless Babies
	Motherless babies living in Foster homes	)	IFC = Foster Home Children
CONTROL GROUPS	Motherless babies living with their families	)	SCF = Save the Children Fund Motherless Babies
		{	ILMB = Ilora Motherless Babies
		(	MBLWR = Motherless Babies Living with Relatives.
CONTROL GROUPS	Children with both parents living	)	ILCG = Ilora Control Group
		{	IBCG = Ibadan Control Group

TABLE 26

CHARACTERISTICS OF FOSTER PARENTS

No.	Name	Occupation	Marital Status	Educational Level	No. of Foster Children in Care
1	Mrs. Agbek	Cook	M. L. W. H.	P. E.	2
2	Mrs. Dor	Spiritual Leader	M. L. W. H.	None	3
3	Mrs. Old	Housewife	M. L. W. H.	T. T. C.	1
4	Mrs. Al	Cook	M. L. W. H.	P. E.	4
5	Mrs. Ad	Petty Trader	M. L. A. H.	P. E.	1
6	Mrs. Ol	Petty Trader	M. L. A. H.	P. E.	1
7	Mrs. Ej	Nurse	M. L. A. H.	Secondary Education	1
8	Mrs. Aki	Sewing Mistress	Widow	P. E.	2
9	Mrs. Ak	None	Widow	P. E.	2
10	Mrs. Og	Matron of a Boarding School	Widow	T. T. C.	2
11	Miss Em	Cleaner	Single	P. E.	1
12	Miss W.	Teacher	Single	University	2
13	Mrs. V.	Teacher	M. S. F. H.	T. T. C.	1
14	Mrs. Co	None	M. S. F. H.	P. E.	4
15	Mrs. B.	None	Divorced	P. E.	2
16	Mrs. Adek	Sewing Mistress	Divorced	P. E.	1

M. L. W. H. = Married, living with husband.

M. S. F. H. = Married, separated from husband.

M. L. A. H. = Married, living away from husband

P. E. = Primary Education

T. T. C. = Teachers' Training

College.

TABLE 27

CHARACTERISTICS OF NURSES IN INSTITUTIONS

	Ibadan Home	Kersey Home	Lagos Home
<u>Staffing</u>			
No. of Trained Staff	1	1	8
No. of Untrained Staff	15	12	10
<u>Marital Status</u>			
Married	13	8	10
Single	3	5	8
<u>Salary Scale</u>			
Starting point (for untrained staff)	£5/month	£7.10 _s /month	£5/month
Annual Increment	10s	10s	None
<u>Hours of Duty</u>			
Working hours/day	8 hrs.	8 hrs	8 hrs
Break period	None	2 hrs	None
Annual Leave	7 days	14 days	14 days
<u>Accommodation</u>			
	Living out	Living in	Living out
<u>Staff turn-over rate</u>	50%	8%	22%

TABLE 28

AVERAGE ANNUAL INCOME OF VARIOUS OCCUPATIONAL
GROUPS IN THE WESTERN STATE 1968/1969

Occupational Groups	Average Income
Farmers	£51
Salary/Wage Earners including Professionals and Administrators	£134
Craftsmen	£56
Traders and Clerical	£129
Other Occupations	£54

Source: Statistical Division
Ministry of Economic Planning
& Social Services,
Western State.

TABLE 29.MORTALITY AMONG GROUPS OF MOTHERLESS BABIES OVER
VARIED PERIODS OF TIME TO SEPTEMBER 1969(RETROSPECTIVE STUDY)

Groups	Period Covered	No. in Care	No. of deaths	Mortality %
Catholic Mission Orphanage	10 years	111	75	68
Ibadan Home	7 years	181	68	38
St. Joseph's Home	2 years	57	15	26
Kersey Children's Home	1½ years	34	7	21
Lagos Home	2 years	50	10	20
Iloran motherless babies	3 years	63	8	13

TABLE 30
MORTALITY BY AGE (IN MONTHS)
(RETROSPECTIVE STUDY)

Groups	Age at time of death (in months)										Total No. of deaths
	0-	3-	6-	9-	12-	24-	36-	48-	60	Not Known	
Catholic Mission Orphanage	43	10	6	2	-	1	-	-	-	13	75
Ibadan Home	43	15	5	4	1	-	-	-	-	-	68
Lagos Home	8	-	-	2	-	-	-	-	-	-	10
Kersey Children's Home	5	2	-	-	-	-	-	-	-	-	7
St. Joseph's Home *	-	-	-	-	-	-	-	-	-	-	-
Ilora motherless babies	1	-	-	1	4	-	1	1	-	-	8
Total number of deaths	100	27	11	9	5	1	1	1	+	13	168

* Record of data incomplete.

TABLE 31

MAJOR CAUSES OF DEATH AMONG THE MOTHERLESS
BABIES

(RETROSPECTIVE STUDY)

Causes of	Catholic Mission Orphanage	Ibadan Home	St. Joseph's Home	Kersey Home	Lagos Home	Ilorin Mother less Babies
Diarrhoea	16	11	5	7	7	3
Malaria	3	-	-	-	-	-
Pneumonia	9	2	4	-	2	-
Measles	2	2	4	-	-	3
Tetanus	1	-	-	-	-	-
Prematurity	11	-	-	-	-	-
Failure to thrive	4	1	2	-	1	-
Malnutrition	-	-	-	-	-	1
Anaemia	3	-	-	-	-	1
Unknown	26	52	-	-	-	-
Total number of deaths	75	68	15	7	10	8

TABLE 32.

COMPARATIVE MORTALITY IN GROUPS OF MOTHERLESS
BABIES BETWEEN OCTOBER 1969 TO MARCH 1971

(PROSPECTIVE STUDY)

Groups	No. of children	No. of deaths	Mortality
IBHMB [⌘]	60	18	30%
IFC	24	2	8.3%
ILMB	30	1	3.3%
MBLWR	27	1	3.7%

⌘ See Table 25b for details of
 abbreviations.

TABLE 33

MORTALITY EXPERIENCE IN RELATION TO LENGTH OF STAY INIBADAN HOME FROM OCTOBER 1969 TO MARCH 1971 ‡

(Prospective Study)

Quarter after entering into Home	No. in Home at the beginning of Quarter	No. discharged within the Quarter	No. exposed to risk of death in the Quarter	No. dying in Home during the Quarter	Probability of death within the Quarter	Probability of survival within the Quarter
X	Nx	Wx	Ex	Dx	Qx	Px
0 -	60	2	59	10	0.1694	0.8306
1 -	48	7	44.5	5	0.1123	0.8877
2 -	36	9	31.5	3	0.0952	0.9048
3 -	24	0	24	0	0	1.0000
4 -	24	2	23	0	0	1.0000
5 -	22	5	19.5	0	0	1.0000

‡ The period of study is divided into 6 three month periods each called a quarter.

The life table method is then used to compare the mortality experience from quarter to quarter.

TABLE 34.

MORTALITY EXPERIENCE IN RELATION TO AGE
IN IBADAN HOME BETWEEN OCTOBER 1969 TO

MARCH 1971

(PROSPECTIVE STUDY)

Age (in months)	Distribution of inmates by age at entry	Distribution of deaths by age at death (in months)
0 -	33	10
3 -	8	4
6 -	2	2
9 -	2	1
12 -	5	1
18 -	3	0
24 -	3	0
30 -	2	0
36 -	2	0
48 -	-	0
60 -	-	0
Total	60	18

TABLE 35.ANALYSIS OF DEATHS BY CAUSE AMONG IBADAN HOMEMOTHERLESS BABIES(PROSPECTIVE STUDY)

<u>Causes of death</u>		<u>Number of deaths</u>
Diarrhoea	-	11
Respiratory infection	-	2
Marasmus	-	2
Septicaemia	-	-
Measles	-	-
Unknown	-	3
Total number of deaths		<hr/> 18 <hr/>

TABLE 36

AGE DISTRIBUTION OF MOTHERLESS BABIES IN THE
VARIOUS GROUPS

		Age range in months.					
Groups*	Sub-groups	0-12	13-24	25-36	37-48	49-60	Total number
Motherless babies in Institutions	IBHMB	27	18	4	1	-	50)
	LHMB	14	14	1	1	-	30)
	KCH	15	9	3	-	-	27)
Motherless babies in Foster Homes	IFC	11	6	5	4	4	30
Motherless babies living with families	SCF	1	5	8	4	2	20)
	ILMB	6	2	12	6	4	30)
	MBLWR	10	3	5	11	8	37)
Control Groups	ILCG	32	17	3	6	2	60)
	IBCG	29	19	17	10	5	80)
Total		145	93	58	43	25	364

* See Table 25b for details of abbreviations.

PERCENTAGE OF CHILDREN IN EACH GROUP WITH VARIOUS PHYSICAL SIGNS ON
GENERAL CLINICAL EXAMINATIONS

GROUPS	STUDY GROUPS								CONTROL GROUPS	
	IBHMB	LHMB	KCH	IFC	SCF	ILMB	MBLWR	ILCG	IBCG	
Number in each group	50	30	27	32	20	30	37	60	80	
Scarification of skin	25%	-	-	20%	20%	73%	47%	14%	17%	
Wearing of charms	-	-	-	3%	10%	7%	19%	-	10%	
<u>SKIN</u>										
Dry Eczema	6%	-	-	-	-	-	-	2%	-	
Pemphigus neonatorum	2%	-	-	-	-	-	-	-	-	
Scabies	-	-	-	-	-	-	3%	-	-	
Septic spots	2%	3%	7%	-	-	10%	-	-	-	
Tinea capitis	-	-	-	-	-	3%	-	-	-	
Nappy rash	-	6%	-	-	-	-	-	-	-	
Loss of subcutaneous fat	-	-	11%	3%	-	-	-	-	-	
<u>HAIR</u>										
Thin	-	-	11%	3%	-	-	-	-	-	
Dispigmented	-	-	-	-	-	-	-	-	-	
<u>ABDOMEN</u>										
Pot Bellies	100%	-	-	-	-	-	-	-	-	
<u>LIPS</u>										
Angular Stomatitis	-	-	-	-	5%	-	-	-	-	
<u>TEETH</u>										
Dental caries	-	-	-	3%	25%	17%	24%	2%	5%	
<u>BONES</u>										
Bow legs	-	-	-	-	5%	-	-	-	-	

See Table 25 b for details of abbreviations.

59

TABLE 38

Heights of various groups of motherless babies and children in the control groups as compared with 50th percentile of Morley's height standard (1968)

Groups #	IBHMB	LHMB	KCH	IFC	SCF	ILMB	MBLWR	ILCG	IBCG
No above 50th P.	6	9	1	8	6	10	14	26	36
No below 50th P.	<u>44</u>	<u>21</u>	<u>26</u>	<u>22</u>	<u>14</u>	<u>20</u>	<u>23</u>	<u>34</u>	<u>44</u>
Total:	<u>50</u>	<u>30</u>	<u>27</u>	<u>30</u>	<u>20</u>	<u>30</u>	<u>37</u>	<u>60</u>	<u>80</u>
% below 50th P.	<u>88</u>	<u>70</u>	<u>96</u>	<u>73</u>	<u>70</u>	<u>67</u>	<u>62</u>	<u>57</u>	<u>55</u>

Test for differences in heights among the nine groups.

$$\chi^2 = 30.03 \text{ on } 8 \text{ df. } P < 0.001$$

Thus the differences are significant.

Comparison of Heights of selected groups.

(i) Children in institutions:

IBHMB versus LHMB

$$\chi^2 = 3.98 \text{ on } 1 \text{ df. } 0.05 > P > 0.025 \text{ Significant LHMB better.}$$

IBHMB versus KCH

$$\chi^2 = 0.63 \text{ on } 1 \text{ df. } 0.5 > P > 0.25 \text{ Not significant.}$$

LHMB versus KCH

$$\chi^2 = 5.10 \text{ on } 1 \text{ df. } 0.025 > P > 0.01 \text{ Significant LHMB better.}$$

(ii) Motherless babies living with families:

MBLWR, ILMB, SCF

$$\chi^2 = 0.38 \text{ on } 2 \text{ df. } P > 0.5 \text{ Not significant.}$$

(iii) Children in the control groups:

IBCG versus ILCG

$$\chi^2 = 0.04 \text{ on } 1 \text{ df. } P > 0.5 \text{ Not significant.}$$

Table 38 cont'd.

(iv) Comparison of motherless babies in institutions with motherless babies living with families:

IBHMB + KCH versus MBLWR + ILMB + SCF

 $\chi^2 = 15.07$ on 1 df. $P < .001$. Significant, Family care better

LHMB versus MBLWR + ILMB + SCF

 $\chi^2 = 0.20$ on 1 df. $P > 0.5$ Not significant.(v) Comparison of motherless babies in institutions with children in the control groups:

IBHMB + KCH versus IBCG + ILCG

 $\chi^2 = 28.37$ on 1 df. $P < 0.001$, significant, Control groups better.

LHMB versus IBCG + ILCG

 $\chi^2 = 2.07$ on 1 df. $0.25 > P > 0.1$ Not significant.(vi) Comparison of motherless babies living with families with children in the control groups:

MBLWR + ILMB + SCF versus IBCG + ILCG

 $\chi^2 = 2.14$ on 1 df. $0.25 > P > 0.1$, Not significant.(vii) Comparison of motherless babies living with their families with the foster home children:

MBLWR + ILMB + SCF versus IFC

 $\chi^2 = 0.62$ on 1 df. $0.5 > P > 0.25$ Not significant.(viii) Comparison of the foster home children with children in the control groups:

IFC versus IBCG + ILCG

 $\chi^2 = 3.17$ on 1 df. $0.1 > P > 0.05$ Not significant

(ix) Comparison of motherless babies in institutions
with the foster home children:

IBHMB + KCH versus IFC

$X^2 = 5.53$ on 1 df. $0.025 > P > 0.010$, Significant
Foster home children better.

LHMB versus IFC

$X^2 = 0.08$ on 1 df. $P > 0.5$ Not significant.

* See table 25b for details of abbreviations.

TABLE 39

Weights of various groups of motherless babies and children
in the control group as compared with 50th percentile of
Morley's weight standard (1968)

Groups ²	IBHMB	LHMB	KCH	IFC	SCF	ILMB	MBLWR	IICG	IBCG
No. below 50th P.	21	10	1	7	7	8	12	28	38
No. above 50th P.	<u>29</u>	<u>20</u>	<u>26</u>	<u>23</u>	<u>13</u>	<u>22</u>	<u>25</u>	<u>32</u>	<u>42</u>
Total	<u>50</u>	<u>30</u>	<u>27</u>	<u>30</u>	<u>20</u>	<u>30</u>	<u>37</u>	<u>60</u>	<u>80</u>
% below 50th P.	<u>58</u>	<u>67</u>	<u>96</u>	<u>77</u>	<u>65</u>	<u>73</u>	<u>68</u>	<u>53</u>	<u>53</u>

Test for differences in weights among the nine groups:

$$X^2 = 24.00 \text{ on } 8 \text{ df. } .005 > P > 0.001$$

Thus the differences are significant.

Comparison of weights of selected groups

(i) Children in institutions:

IBHMB versus LHMB

$$X^2 = 0.28 \text{ on } 1 \text{ df. } P > 0.5 \text{ Not significant.}$$

IBHMB versus KCH

$$X^2 = 10.79 \text{ on } 1 \text{ df. } 0.005 > P > 0.001, \text{ significant IBHMB better}$$

LHMB versus KCH

$$X^2 = 6.22 \text{ on } 1 \text{ df. } 0.025 > P > 0.01 \text{ Significant LHMB better}$$

(ii) Motherless babies living with families

MBLWR, ILMB, SCF

$$X^2 = 0.45 \text{ on } 2 \text{ df. } P > 0.5, \text{ Not significant.}$$

(iii) Children in the control groups:

IBCG versus ILCG

 $\chi^2 = 0.01$ on 1 df. $P > 0.5$ Not significant.(iv) Comparison of motherless babies in institutions with motherless babies living with families.

IBHMB + LHMB versus MBLWR + ILMB + SCF

 $\chi^2 = 0.23$ on 1 df. $P > 0.5$, Not significant

KCH versus MBLWR + ILMB + SCF

 $\chi^2 = 8.31$ on 1 df. $0.005 > P > 0.001$. Significant,
Family care better.(v) Comparison of motherless babies in institutions with children in the control groups:

IBHMB + LHMB versus IBCG + ILCG

 $\chi^2 = 3.62$ on 1 df. $0.1 > P > 0.05$ Not significant

KCH versus IBCG + ILCG

 $\chi^2 = 17.78$ on 1 df. $P < 0.001$, Significant, control
groups better.(vi) Comparison of motherless babies living with families with children in the control groups:

MBLWR + ILMB + SCF versus IBCG + ILCG

 $\chi^2 = 5.76$ on 1 df. $0.025 > P > 0.01$. Significant, Control
groups better.(vii) Comparison of motherless babies living with their families with the foster home children:

MBLWR + ILMB + SCF versus IFC

 $\chi^2 = 0.64$ on 1 df. $0.5 > P > 0.25$ Not significant.

Table 39 contd.

(viii) Comparison of the foster home children with children in the control groups:

IFC versus IBCG + ILCG

$$X^2 = 5.72 \text{ on } 1 \text{ df. } 0.025 > P > 0.01, \text{ Significant}$$

Control groups better.

(ix) Comparison of motherless babies in institutions with the foster home children.

IBHMB + LHMB versus IFC

$$X^2 = 1.28 \text{ on } 1 \text{ df. } 0.5 > P > 0.25, \text{ Not significant.}$$

KCH versus IFC.

$$X^2 = 4.54 \text{ on } 1 \text{ df. } 0.05 > P > 0.025 \text{ Significant}$$

Foster home children better

* See Table 25b for details of abbreviations.

TABLE 40.

THE PERCENTAGE OF CHILDREN IN EACH
GROUP WITH LIVER OR SPLEEN ENLARGEMENT

	Groups	No. examined	Liver Rate	Splāen Rate
STUDY GROUPS	IBHMB [*]	50	20%	12%
	LHMB	30	5%	10%
	KCH	27	23%	3%
	IFC	30	18%	15%
	SCF	20	5%	10%
	ILMB	30	20%	27%
	MBLWR	37	28%	22%
CONTROL GROUPS	ILCG	60	22%	16%
	IBCG	80	19%	11%

* See Table 25b for details of abbreviations

TABLE 41.PACKED CELL VOLUME ESTIMATIONS IN ALL GROUPS

	Groups	No. examined	Mean	S. D.	S.E.M.
STUDY GROUPS	IBHMB*	50	32.0	3.68	0.51
	LHMB	28	36.9	4.01	0.76
	KCH	20	32.7	4.48	1.00
	IFC	30	30.0	3.58	0.63
	SCF	20	32.4	5.32	1.19
	ILMB	29	34.4	3.64	0.68
	MBLWR	34	31.9	4.26	0.73
CONTROL GROUPS	ILCG	33	31.2	4.26	0.74
	IBCG	45	33.5	3.12	0.48

* See Table 25b for details of abbreviations

TABLE 42.

HAEMOGLOBIN LEVEL BELOW WHICH ANAEMIA CAN BE SAID
TO EXIST, AND ASSOCIATED PACKED CELL VOLUMES (PCV%)
FOUND IN IRON DEFICIENCY

Age (Years)	Sex	Hb Gm/100 ml	P.C.V.
0.5 - 4		10.8)	32
5 - 9		11.5)11.5	33
10 - 14		12.5)	37
Adults	Male	14	42
	Female	12	36
	Pregnant Female	10	30

Reproduced from W.H.O. Study group on Iron
Deficiency anaemia (1959).

Source: W.H.O. Monograph, No. 53, p. 93.

TABLE 43.PERCENT HAEMOGLOBIN GENOTYPE DISTRIBUTION AMONG
GROUPS OF MOTHERLESS BABIES

	Groups [*]	No. examined	AA	AS	SS	SC	AC	CC
STUDY GROUPS	IBHMB	50	62%	23%	4%	2%	9%	0%
	LHMB	28	68%	24%	4%	4%	0%	0%
	KCH	20	65%	25%	0%	0%	10%	0%
	IFC	30	47%	44%	0%	0%	9%	0%
	SCF	20	70%	30%	0%	0%	0%	0%
	ILMB	26	65%	20%	0%	4%	11%	2%
	MBLWR	34	71%	21%	0%	0%	6%	2%
CONTROL GROUPS	ILCG	33	62%	17%	3%	6%	12%	0%
	IBCG	45	82%	11%	0%	0%	5%	2%

* See Table 25b for details of abbreviations.

TABLE 44

PERCENTAGE OF CHILDREN IN EACH GROUP WITH
POSITIVE SLIDES FOR MALARIA PARASITES

		PERCENT OCCURRENCE				
	Groups*	No. ex- amined	P. Falciparum	P. Ovale	P. Malariae	P. Malariae and P. Ovale
STUDY GROUPS	IBHMB	50	0	0	0	0
	LHMB	28	0	0	0	0
	KCH	20	0	0	0	0
	IFC	30	0	0	0	0
	SCF	20	10	0	0	0
	ILMB	29	57	0	0	3
	MBLWR	34	15	0	0	0
CONTROL	ILCG	33	53	3	0	0
GROUPS	IBCG	45	11	0	0	0

Test for differences in percentages of each group with positive slides for malaria parasites.

No significant difference between the percentages of ILCG and ILMB with positive blood films for malaria parasites ($P > 0.5$)

Percentages of ILCG and ILMB with positive blood films are significantly different from those of the other groups ($P < 0.05$ in each)

There is no significant difference between the percentages of IBCG, MBLWR and SCF with positive blood films for malaria parasites ($P > 0.05$).

* See Table 25b for details of abbreviations.

TABLE 45.

RESULTS OF ROUTINE EXAMINATION OF URINE
OF ALL GROUPS

	Groups	No. examined	Blood	Sugar	Albumin	Pus-cells
STUDY GROUPS	IBHMB*	33	9% Tr.	-	3% Tr.	-
	LHMB	28	6% Tr.	-	21% Tr.	21% Occ.
	KCH	20	-	-	35% Tr.	35% Occ.
	IFC	24	9% Tr.	-	30% Tr.	18% Occ.
	SCF	20	-	-	5% Tr.	5% Occ.
	ILMB	29	3% Tr.	-	-	-
	MBLWR	33	-	3%Tr.	27% Tr.	5% Occ.
CONTROL GROUPS	ILCG	33	2% Tr.	-	19% Tr.	14%Occ.
	IBCG	42	-	-	19% Tr.	21%Occ.

Tr. = Trace (as indicated on the 'haemacombistix')

Occ. = Occasional (3-4 pus-cells per unit field under the high power objective).

* See Table 25b for details of abbreviations.

TABLE 46.

INCIDENCE OF HELMINTHIC INFECTIONS FOR THE VARIOUS GROUPS

	Groups [*]	No. examined	Ascaris	Ascaris & Trichiuris	Tri- chiuris
STUDY GROUPS	IBHMB	30	-	3%	-
	LHMB	28	-	-	-
	KCH	20	-	-	5%
	IFC	30	12%	3%	3%
	SCF	18	55%	5%	-
	ILMB	29	52%	3%	-
	MBLWR	34	50%	9%	-
CONTROL GROUPS	ILCG	33	34%	-	-
	IBCG	41	38%	-	4%

Test for differences between groups:

1. Ascaris No significant difference ($P > 0.05$) among the percentages for ILMB, MBLWR, SCF, ILCG and IBCG, but these five groups are significantly different from the other groups ($P < .05$).
2. Ascaris and Trichiuris No significant difference among groups ($P > 0.05$).
3. Trichiuris No significant difference among groups ($P > 0.05$).

* See Table 25b for details of abbreviations.

TABLE 47

TABLE SHOWING CRUDE PARASITE RATES (%) AND PACKED CELL
VOLUME (%) IN VARIOUS GROUPS

	Groups	No. examined	Packed cell Volume	Crude Para- site Rate
STUDY GROUPS	* IBHMB	50	32.0	0%
	LHMB	28	36.9	0%
	KCH	20	32.7	0%
	IFC	30	30.0	0%
	SCF	20	32.0	10%
	ILMB	29	34.4	60%
	MBLWR	34	31.9	15%
CONTROL GROUPS	ILCG	33	31.2	56%
	IBCG	45	33.5	11%

* See Table 25b for details of abbreviations.

TABLE 48

Mean and standard error of the means of ages
of groups of motherless babies and the controls

	Groups [*]	0 - 2 Years			2 - 5 Years		
		No. examined	Mean Age (yrs)	Standard Error	No. examined	Mean age (yrs)	Standard Error
STUDY GROUPS	IBHMB	48	0.83	0.08	5	2.65	0.27
	LHMB	28	1.01	0.07	2	2.84	0.24
	KCH	13	1.22	0.10	4	2.31	0.11
	IFC	17	0.86	0.11	13	3.58	0.29
	SCF	6	1.35	0.10	14	2.91	0.18
	ILMB	6	1.26	0.10	22	3.57	0.20
	MBLWR	11	1.16	0.15	23	3.92	0.19
CONTROL GROUPS	ILCG	21	0.99	0.12	11	3.85	0.36
	IBCG	22	0.80	0.09	18	3.39	0.23

* See Table 25b for details of abbreviations

TABLE 49

Median, overall median and Chi-Square values of scores of children aged 0-2 years on the locomotor sub-scale of the Griffiths Baby Test

Frequency distribution of scores

Scores	STUDY GROUPS							CONTROL GROUPS	
	(1) *IBHMB	(2) LHMB	(3) KCH	(4) IFC	(5) SCF	(6) ILMB	(7) MBLWR	(8) ILCG	(9) IBCG
0 - 9	13	1	1	3	1	-	-	2	-
10-19	19	9	4	4	-	-	1	8	9
20-29	5	5	5	5	1	1	2	3	6
30-39	5	8	3	-	3	4	4	2	4
40-49	5	4	-	5	-	1	2	3	1
50-59	-	1	-	-	1	-	2	3	2
	<u>47</u>	<u>28</u>	<u>13</u>	<u>17</u>	<u>6</u>	<u>6</u>	<u>11</u>	<u>21</u>	<u>22</u>

Median Score

14 29 22 22 30.6 32.6 33 25 20

Examination of the data by the use of the extension of the median test to ascertain whether there is any difference among the nine groups with respect to their median scores:

Overall median = 25

Groups	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
No. above median	11	19	6	8	5	6	9	11	10
No. below median	36	9	7	9	1	0	2	10	12

$$X^2 = 28.88 \text{ on } 8 \text{ d.f. } P < .001$$

Thus differences between the groups are highly significant.

TABLE 49 Cont'd.

Test of significance for differences between selected groups

(i) Comparison of children in institutions:

IBHMB versus LHMB

$\chi^2 = 12.65$ on 1 d.f. $P < .001$, significant difference. LHMB better.

IBHMB versus KCH

$\chi^2 = 2.59$ on 1 d.f. $0.1 > P > 0.05$; No significant difference.

LHMB versus KCH

$\chi^2 = 0.96$ on 1 d.f. $0.5 > P > 0.25$ No significant difference.

(ii) Comparison between children living with families:

MBLWR, ILMB, SCF.

$\chi^2 = 1.22$ on 2 d.f. $0.75 > P > 0.5$. No significant difference.

There is no difference among the three sub. groups

(iii) Comparison between the control groups:

IBCG versus ILCG

$\chi^2 = 0.02$ on 1 d.f. $P > 0.75$. No significant difference.

(iv) Comparison between children in institutions and children living with families:

LHMB + KCH versus MBLWR + ILMB + SCF

$\chi^2 = 4.76$ on 1 d.f. $0.05 > P > 0.025$. Significant difference. Family care better

IBHMB versus MBLWR + ILMB + SCF.

$\chi^2 = 20.82$ on 1 d.f. $P < .001$. Significant difference. Family care better.

Table 49 cont'd.

- (v) Comparison between children in institutions and children in the control groups:

LHMB + KCH versus IBCG + ILCG

$X^2 = 1.24$ on 1 d.f. $0.5 > P > 0.25$. No significant difference.

IBHMB versus IBCG + ILCG

$X^2 = 6.34$ on 1 d.f. $0.025 > P > 0.010$. Significant difference. Control groups better.

- (vi) Comparison between children living with families and children in the control groups:

MBLWR + ILMB + SCF versus IBCG + ILCG

$X^2 = 6.33$ on 1 d.f. $0.025 > P > 0.010$. Significant difference. Family care better.

- (vii) Comparison between children living with families and foster home children:

MBLWR + ILMB + SCF versus IFC

$X^2 = 7.41$ on 1 d.f. $0.01 > P > .005$. Significant difference. Family care better.

- (viii) Comparison between foster home children and children in the control groups:

IFC versus IBCG + ILCG

$X^2 = 0.02$ on 1 d.f. $P > 0.75$ No significant difference.

- (ix) Comparison between foster home children and children in institutions:

LHMB + KCH versus IFC

$X^2 = 0.95$ on 1 d.f. $0.5 > P > 0.25$ No significant difference.

IBHMB versus IFC

$X^2 = 3.35$ on 1 d.f. $0.1 > P > 0.05$. No significant difference.

* See Table 25b for details of abbreviations.

TABLE 50

Median, overall median and Chi-Square values of scores of children aged 0-2 years on the personal-social sub-scale of the Griffiths Baby Test

Frequency distribution of scores

Scores	STUDY GROUPS							CONTROL GROUPS	
	(1) IBHMB	(2) LHMB	(3) KCH	(4) IFC	(5) SCF	(6) ILMB	(7) MBLWR	(8) ILCG	(9) IBCG
0 - 9	9	-	3	2	-	-	-	1	3
10-19	25	7	3	4	-	-	-	6	6
20-29	4	10	2	5	3	2	3	6	7
30-39	8	9	5	1	2	3	5	2	3
40-49	1	1	-	5	-	1	2	4	2
50-59	-	1	-	-	1	-	1	2	1
	<u>47</u>	<u>28</u>	<u>13</u>	<u>17</u>	<u>6</u>	<u>6</u>	<u>11</u>	<u>21</u>	<u>22</u>

Median Score 14 27 27 24 30.5 31 34 25 20

Examination of the data by the use of the extension of the median test to ascertain whether there is any difference among the nine groups with respect to their median scores:

Overall median = 23

Groups	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
No. above median	12	18	7	9	5	6	10	11	8
No. below median	35	10	6	8	1	0	1	10	14

$$\chi^2 = 31.39 \text{ on } 8 \text{ d.f. } P < .001$$

Thus differences between the groups are highly significant.

Table 50 Con'td

Tests of significance for differences between selected groups.(i) Comparison of children in institutions:

IBHMB versus LHMB

$\chi^2 = 10.98$ on 1 d.f. $P < .001$. Significant difference.
LHMB better

IBHMB versus KCH

$\chi^2 = 3.77$ on 1 d.f. $0.1 > P > 0.05$ No significant
difference.

LHMB versus KCH

$\chi^2 = 0.09$ on 1 d.f. $P > 0.75$ No significant difference

(ii) Comparison between children living with families:

MBLWR, ILMB, SCF

$\chi^2 = 1.05$ on 2 d.f. $0.75 > P > 0.5$ No significant difference

(iii) Comparison between the control groups:

IBCG versus ILCG

$\chi^2 = 0.56$ on 1 d.f. $0.5 > P > 0.25$. No significant difference.

(iv) Comparison between children in institutions and children living with families:

LHMB + KCH versus MBLWR + ILMB + SCF

$\chi^2 = 6.70$ on 1 d.f. $0.01 > P > 0.005$. Significant difference. Family
care better.

IBHMB versus MBLWR + ILMB + SCF

$\chi^2 = 26.81$ on 1 d.f. $P < .001$. Significant difference.
Family care better.

Table 50 contd.

- (v) Comparison between children in institutions and children in the control groups:
- LHMB + KCH versus IBCG + ILCG
- $X^2 = 2.37$ on 1 d.f. $0.1 > P > 0.05$. No significant difference.
- IBHMB versus IBCG + ILCG
- $X^2 = 3.46$ on 1 d.f. $0.1 > 0.05$. No significant difference
- (vi) Comparison between children living with families and children in the control groups:
- MBLWR + ILMB + SCF versus IBCG + ILCG
- $X^2 = 13.93$ on 1 d.f. $P < .001$. Significant difference. Family care better.
- (vii) Comparison between children living with families and foster home children:
- MBLWR + ILMB + SCF versus IFC
- $X^2 = 7.67$ on 1 d.f. $0.01 > P > 0.005$. Significant difference. Family care better.
- (viii) Comparison between foster home children and children in the control groups:
- IFC versus IBCG + ILCG
- $X^2 = 0.38$ on 1 d.f. $0.75 > P > 0.5$. No significant difference.
- (ix) Comparison between foster home children and children in institutions:
- IFC versus IBHMB
- $X^2 = 4.25$ on 1 d.f. $0.05 > P > 0.025$. Significant difference. Foster home care better.
- IFC versus LHMB + KCH
- $X^2 = 0.07$ on 1 d.f. $P > 0.75$. No significant difference.

TABLE 51.

Median, overall median and Chi-Square values of scores of children aged 0-2 years on the Hearing and Speech sub-scale of the Griffiths Baby Test

Frequency distribution of scores

Scores	STUDY GROUPS							CONTROL GROUPS	
	(1) IBHMB*	(2) LHMB	(3) KCH	(4) IFC	(5) SCF	(6) ILMB	(7) MBLWR	(8) ILCG	(9) IBCG
0 - 9	11	1	4	3	-	-	-	2	4
10-19	24	9	2	5	1	-	1	8	11
20-29	8	10	5	4	4	3	3	3	3
30-39	4	6	2	-	-	2	4	3	1
40-49	-	2	-	5	1	1	2	3	2
50-59	-	-	-	-	-	-	4	2	1
	<u>47</u>	<u>28</u>	<u>13</u>	<u>17</u>	<u>6</u>	<u>6</u>	<u>11</u>	<u>21</u>	<u>22</u>

Median Score

12	25	24	22	26	30.5	34	23	16
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Examination of the data by the use of the extension of the median test to ascertain whether there is any difference among the nine groups with respect to their median scores:

Overall median = 20

Groups	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
No. above median	11	18	8	9	5	6	10	11	7
No. below median	36	10	5	8	1	0	1	10	15

$$X^2 = 35.32 \text{ on } 8 \text{ d.f. } P < .001$$

Thus differences between the groups are highly significant.

Test of significance for differences between selected groups.

(1) Comparison of children in institutions:

IBHMB versus LHMB

$X^2 = 12.37$ on 1 d.f. $P < .001$. Significant. LHMB better.

IBHMB versus KCH

$X^2 = 6.84$ on 1 d.f. $0.1 > P > 0.005$. Significant. KCH better.

LHMB versus KCH

$X^2 = 0.03$ on 1 d.f. $P > 0.75$. No significant difference.

(ii) Comparison between children living with families

MBLWR, ILMB, SCF

$X^2 = 1.05$ on 2 d.f. $0.75 > P > 0.50$. No significant difference.

There is no significant difference among the three sub-groups.

(iii) Comparison between the control groups:

IBCG versus ILCG

$X^2 = 1.12$ on 1 d.f. $0.5 > P > 0.25$. No significant difference.

(iv) Comparison between children in institutions and children living with families.

LHMB + KCH versus MBLWR + ILMB + SCF

$X^2 = 5.88$ on 1 d.f. $0.025 > P > 0.01$. Significant difference. Family care better.

IBHMB versus MBLWR + ILMB + SCF

$X^2 = 28.69$ on 1 d.f. $P < .001$. Significant difference. Family care better.

Table 51. contd.

(v) Comparison between children in institutions and children in the control groups:

LHMB + KCH versus IBCG + ILCG

$\chi^2 = 3.91$ on 1 d.f. $0.050 > P > 0.025$. Significant difference. Institutional care better.

IBHMB versus IBCG + ILCG

$\chi^2 = 3.50$ on 1 d.f. $0.1 > P > 0.05$. No significant difference.

(vi) Comparison between children living with families and in the control groups:

MBLWR + ILMB + SCF versus IBCG + ILCG

$\chi^2 = 15.15$ on 1 d.f. $P < .001$. Significant difference. Family care better.

(vii) Comparison between children living with families and foster home children:

MBLWR + ILMB + SCF versus IFC

$\chi^2 = 5.76$ on 1 d.f. $0.025 > P > 0.01$. Significant difference. Family care better.

(viii) Comparison between foster home children and children in the control groups:

IFC versus IBCG + ILCG

$\chi^2 = 0.60$ on 1 d.f. $P > 0.5$. No significant difference.

(ix) Comparison between Foster home children and children in institutions.

IFC versus IBHMB

$\chi^2 = 5.07$ on 1 d.f. $0.025 > P > 0.01$. Significant difference. IFC better.

IFC versus LHMB + KCH

$\chi^2 = 0.55$ on 1 d.f. $0.5 > P > 0.25$. No significant difference.

TABLE 52.

Median, overall median and Chi-Square values of scores of children aged 0-2 years on the Eye and Hand sub-scale of the Griffiths Baby Test

Frequency distribution of scores

Scores	STUDY GROUPS							CONTROL GROUPS	
	(1) *IBHMB	(2) LHMB	(3) KCH	(4) IFC	(5) SCF	(6) ILMB	(7) MBLWR	(8) KCG	(9) IBCG
0 - 9	19	2	2	2	-	-	-	2	3
10-19	15	8	3	6	1	-	-	5	9
20-29	5	8	2	4	3	2	3	6	4
30-39	7	8	6	-	1	2	5	2	3
40-49	1	1	-	5	1	2	2	4	2
50-59	-	1	-	-	-	-	1	2	1
	<u>47</u>	<u>28</u>	<u>13</u>	<u>17</u>	<u>6</u>	<u>6</u>	<u>11</u>	<u>21</u>	<u>22</u>

Median score

13 26.5 26 25 29 32.5 34 23 18

Examination of the data by the use of the extension of the median test to ascertain whether there is any difference among the nine groups with respect to their median scores:

Overall median = 22.

Groups	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
No. above median	12	18	7	9	5	6	10	12	8
No. below median	35	10	6	8	1	0	1	9	14

$$X^2 = 31.73 \text{ on } 8 \text{ d.f. } P < .001$$

Thus differences between the groups are highly significant.

Table 52. Cont'd.

Test of significance for differences between selected groups(i) Comparison of children in institutions:

IBHMB versus LHMB

$\chi^2 = 10.98$ on 1 d.f. $P < .001$. Significant difference.
LHMB better.

IBHMB versus KCH

$\chi^2 = 3.77$ on 1 d.f. $0.17 > P > 0.05$. No significant difference.

LHMB versus KCH

$\chi^2 = 0.09$ on 1 d.f. $P > 0.5$. No significant difference.

(ii) Comparison between children living with families:

MBLWR, ILMB, SCF

$\chi^2 = 1.05$ on 2 d.f. $P > 0.5$. No significant difference.

There is no significant difference among the three sub-groups.

(iii) Comparison between the control groups:

$\chi^2 = 1.12$ on 1 d.f. $0.5 > P > 0.25$. No significant difference.

(iv) Comparison between children in institutions and children living with families:

LHMB + KCH versus MBLWR + ILMB + SCF

$\chi^2 = 6.70$ on 1 d.f. $0.01 > P > 0.005$. Significant difference.
Family care better.

IBHMB versus MBLWR + ILMB + SCF

$\chi^2 = 26.81$ on 1 d.f. $P < .001$. Significant. Family care better.

(v) Comparison between children in institutions and children in the control groups:

LHMB + KCH versus IBCG + ILCG

$\chi^2 = 1.77$ on 1 d.f. $0.25 > P > 0.1$. No significant difference.

IBHMB versus IBCG + ILCG

$\chi^2 = 5.31$ on 1 d.f. $0.025 > P > 0.01$. Significant difference.
control groups better.

Table 52. contd.

(vi) Comparison between children living with families and children in the control groups.

MBLWR + ILMB + SCF versus IBCG + ILCG

$\chi^2 = 12.78$ on 1 d.f. $P < .001$. Significant difference.
Family care better.

(vii) Comparison between children living with families and foster home children:

MBLWR + ILMB + SCF versus IFC

$\chi^2 = 7.67$ on 1 d.f. $0.01 > P > 0.005$. Significant difference.
Family care better.

(viii) Comparison between foster home children and children in the control groups;

IFC versus IBCG + ILCG

$\chi^2 = 0.20$ on 1 d.f. $P > 0.5$ No significant difference.

(ix) Comparison between foster home children and children in institutions:

IFC versus IBHMB

$\chi^2 = 5.07$ on 1 d.f. $0.025 > P > 0.01$. Significant difference.
Foster home care better.

IFC versus LHMB + KCH

$\chi^2 = 0.32$ on 1 d.f. $P > 0.5$ No significant difference.

* See Table 25b for details of abbreviations.

TABLE 53.

Median, overall median and Chi-Square value of scores of children aged 0-2 years on the performance sub-scale of the Griffiths Baby Test

Frequency distribution of scores

Scores	STUDY GROUPS					CONTROL GROUPS			
	(1) *IBHMB	(2) LHMB	(3) KCH	(4) IFC	(5) SCF	(6) ILMB	(7) MELWR	(8) ILCG	(9) IBCG
0 - 9	17	2	2	4	-	-	-	2	5
10-19	17	8	4	3	1	-	1	6	6
20-29	4	5	1	5	2	2	3	6	7
30-39	9	11	6	-	2	3	3	1	1
40-49	-	2	-	4	1	1	3	5	2
50-59	-	-	-	1	-	-	1	1	1
	<u>47</u>	<u>28</u>	<u>13</u>	<u>17</u>	<u>6</u>	<u>6</u>	<u>11</u>	<u>21</u>	<u>22</u>
<u>Median score</u>	12	28	28	24	27	31	34	26	19.5

Examination of the data by the use of the extension of the median test to ascertain whether there is any difference among the nine groups with respect to their median scores:

Overall median = 22

Groups	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
No. above median	11	18	7	9	5	6	10	12	7
No. below median	36	10	6	8	11	0	1	9	15

$$X^2 = 35.08 \text{ on } 8 \text{ d.f. } P < .001.$$

Thus differences between the groups are highly significant.

Table 53. Cont'd.

Test of significance for differences between selected groups

(i) Comparison of children in institutions:

IBHMB versus LHMB

$X^2 = 12.37$ on 1 d.f. $P < .001$. Significant difference.
LHMB better.

IBHMB versus KCH

$X^2 = 4.49$ on 1 d.f. $0.05 > P > 0.025$. Significant difference.
KCH better.

LHMB versus KCH

$X^2 = 0.41$ on 1 d.f. $P > 0.5$ No significant difference.

(ii) Comparison of children living with families:

MBLWR, ILMB, SCF

$X^2 = 1.06$ on 2 d.f. $P > 0.5$. No significant difference.

There is no significant difference among the three sub-groups.

(iii) Comparison between the control groups:

IBCG versus ILCG

$X^2 = 2.79$ on 1 d.f. $0.1 > P > 0.05$. No significant difference.

(iv) Comparison between children in institutions and children living with families:

LHMB + KCH versus MBLWR + ILMB + SCF

$X^2 = 6.70$ on 1 d.f. $0.01 > P > 0.005$. Significant difference.
Family care better.

IBHMB versus MBLWR + ILMB + SCF

$X^2 = 28.70$ on 1 d.f. $P < .001$. Significant difference.
Family care better.

Table 53 Cont'd.

(v) Comparison between children in institutions and children in the control groups:

(a) IBHMB versus IBCG

$\chi^2 = 0.55$ on 1 d.f. $0.5 > P > 0.25$. No significant difference.

(b) IBHMB versus ILCG

$\chi^2 = 7.38$ on 1 d.f. $0.01 > P > 0.001$. Significant difference. ILCG better.

(c) LHMB + KCH versus IBCG

$\chi^2 = 4.86$ on 1 d.f. $0.05 > P > 0.025$. Significant difference. Institutional care better.

(d) LHMB + KCH versus ILCG.

$\chi^2 = 0.08$ on 1 d.f. $0.5 > P > 0.25$. No significant difference.

(vi) Comparison between children living with families and children in the control groups

MBLWR + ILMB + SCF versus IBCG

$\chi^2 = 16.92$ on 1 d.f. $P < .001$. Significant difference. Family care better.

MBLWR + ILMB + SCF versus ILCG

$\chi^2 = 6.83$ on 1 d.f. $0.01 > P > 0.005$. Significant difference. Family care better.

(vii) Comparison between children living with families and foster home children:

MBLWR + ILMB + SCF versus IFC

$\chi^2 = 7.67$ on 1 d.f. $0.01 > P > 0.005$. Significant difference. Family care better.

Table 53 Cont'd.

(viii) Comparison between foster home children and children in the control groups:

IFC versus IBCG

$\chi^2 = 1.76$ on 1 d.f. $0.25 > P > 0.1$. No significant difference.

IFC versus ILCG

$\chi^2 = 0.07$ on 1 d.f. $P > 0.05$. No significant difference.

(ix) Comparison between foster home children and children in institutions:

IFC versus IBHMB

$\chi^2 = 5.07$ on 1 d.f. $0.025 > P > 0.01$. Significant difference. Foster home care better.

IFC versus LHMB + KCH

$\chi^2 = 0.32$ on 1 d.f. $P > 0.5$. No significant difference.

* See Table 25b for details of abbreviations.

TABLE 54

Coefficient of concordance among the five variables.

Median values

	STUDY GROUPS							CONTROL GROUPS	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	IBHMB	LHMB	KCH	IFC	SCF	ILMB	MBLWR	ILCG	IBCG
Loc.	14	29	22	22	30.5	32.5	33	25	20
P - S	14	27	27	24	30.5	31	34	25	20
H & S	12	25	24	22	26	30.5	34	23	16
E & H	13	26.5	26	25	29	32.5	34	23	18
Perf.	12	28	28	24	27	31	34	26	19.5

Ranks of the median scores for each group and for each variable

	STUDY GROUPS							CONTROL GROUPS	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	IBHMB	LHMB	KCH	IFC	SCF	ILMB	MBLWR	ILCG	IBCG
Loc.	9	4	6.5	6.5	3	2	1	5	8
P - S	9	4.5	4.5	7	3	2	1	6	8
H & S	9	4	5	7	3	2	1	6	8
E & H	9	4	5	6	3	2	1	7	8
Perf.	9	3.5	3.5	7	5	2	1	6	8

Kendall's Co-efficient of Concordance W.

For the variables (Loc, P - S, H & S, E & H, Perf.)

$W = 0.94$ $P < 0.001$.

Thus , the degree of concordance among these five variable is very high and significant.

* See Table 25b for details of abbreviations.

TABLE 55

Median, overall median and Chi-Square values of Intelligence
Quotient scores of children aged 0-2 years

Frequency distribution of scores

Scores	STUDY GROUPS							CONTROL GROUPS	
	(1) *IBHMB	(2) LHMB	(3) KCH	(4) IFC	(5) SFC	(6) ILMB	(7) MBLWR	(8) ILCG	(9) IBCG
30-39	2	-	-	-	-	-	-	-	-
40-49	-	-	-	-	1	-	-	-	-
50-59	6	-	-	-	-	-	-	-	1
60-69	11	2	-	-	-	-	-	-	-
70-79	11	2	-	4	-	1	-	-	-
80-89	9	6	1	4	-	2	1	2	3
90-99	7	9	4	7	-	1	2	3	5
100-109	2	7	3	-	1	2	2	8	8
110-119	-	1	4	2	3	-	2	3	2
120-129	-	1	1	-	1	-	1	2	2
130-139	-	-	-	-	-	-	3	2	-
140-149	-	-	-	-	-	-	-	1	1
	<u>48</u>	<u>28</u>	<u>13</u>	<u>17</u>	<u>6</u>	<u>6</u>	<u>11</u>	<u>21</u>	<u>22</u>

Median score

75 97 102 90 111 89 117 102 103.4

Examination of the data by the use of the extension of the
median test to ascertain whether there is any difference
among the nine groups with respect to their median scores: -

Table 55 Cont'd.

Overall median = 97

Groups	(1) IBHMB	(2) LHMB	(3) FCH	(4) IFC	(5) SCF	(6) ILMB	(7) MBLWR	(8) ILCG	(9) IBCG
No. above median	2	10	10	2	5	2	9	16	14
No. below median	46	18	3	15	1	4	2	5	8

$$\chi^2 = 61.73 \text{ on } 8 \text{ d.f. } P < .001$$

Thus differences between the groups are highly significant.

Tests of significance for differences between selected groups.

(i) Comparison of children in institutions:

IBHMB versus LHMB

$$\chi^2 = 13.23 \text{ on } 1 \text{ d.f. } P < .001. \text{ Significant difference}$$

LHMB better.

IBHMB versus KCH

$$\chi^2 = 17.11 \text{ on } 1 \text{ d.f. } P < .001. \text{ Significant difference.}$$

KCH better.

LHMB versus KCH

$$\chi^2 = 0.32 \text{ on } 1 \text{ d.f. } P > 0.5 \quad \text{No significant difference.}$$

(ii) Comparison between children living with families:

MBLWR, ILMB, SCF

$$\chi^2 = 5.03 \text{ on } 2 \text{ d.f. } 0.1 > P > 0.05 \quad \text{No significant difference.}$$

(iii) Comparison between the control groups:

IBCG versus ILCG

$$\chi^2 = 0.08 \text{ on } 1 \text{ d.f. } 0.5 > P > 0.25. \text{ No significant difference.}$$

- (iv) Comparison between children in institutions and children living with families:
- (a) IBHMB versus MBLWR + SCF
 $\chi^2 = 37.25$ on 1 d.f. $P < .001$. Significant difference. MBLWR + SCF better.
 - (b) IBHMB versus ILMB
 $\chi^2 = 3.05$ on 1 d.f. $0.1 > P > 0.05$. No significant difference.
 - (c) LHMB + KCH versus MBLWR + SCF
 $\chi^2 = 7.84$ on 1 d.f. $0.01 > P > 0.005$. Significant difference. MBLWR + SCF better.
 - (d) LHMB + KCH versus ILMB
 $\chi^2 = 0.08$ on 1 d.f. $P > 0.5$. No significant difference.
- (v) Comparison between children in institutions and children in the control groups:
- (a) IBHMB versus IBCG + ILCG
 $\chi^2 = 39.98$ on 1 d.f. $P < .001$. Significant difference. Control groups better.
 - (b) LHMB + KCH versus IBCG + ILCG
 $\chi^2 = 7.56$ on 1 d.f. $0.01 > P > 0.005$. Significant difference. Control groups better.
- (vi) Comparison between children living with families and children in the control groups:
- (a) MBLWR + SCF versus IBCG + ILCG
 $\chi^2 = 0.44$ on 1 d.f. $P > 0.5$ No significant difference.
 - (b) ILMB versus IBCG + ILCG
 $\chi^2 = 1.69$ on 1 d.f. $0.25 > P > 0.1$. No significant difference.

Table 55 Cont'd.

(vii) Comparison between children living with families and foster home children:

MBLWR + SCF versus IFC

$X^2 = 17.00$ on 1 d.f. $P < .001$. Significant. MBLWR + SCF better.

ILMB versus IFC

$X^2 = 0.33$ on 1 d.f. $P > 0.5$. No significant difference.

(viii) Comparison between foster home children and children in the control groups:

IFC versus IBCG + ILCG

$X^2 = 16.47$ on 1 d.f. $P < .001$. Significant difference. Control groups better.

(ix) Comparison between foster home children and children in institution:

IFC versus IBHMB

$X^2 = 1.25$ on 1 d.f. $P > 0.1$. No significant difference.

IFC versus LHMB + KCH

$X^2 = 4.39$ on 1 d.f. $.05 > P > .025$. Significant difference LHMB + KCH better.

⌘ See Table 25b for details of abbreviations.

Table 56.

Median, overall median and Chi-Square values of the
Intelligent Quotient Scores of children aged 2-5 years
Frequency distribution of scores

Scores	STUDY GROUPS							CONTROL GROUPS	
	(1) *IBHMB	(2) LHMB	(3) KCH	(4) IFC	(5) SCF	(6) ILMB	(7) MBLWR	(8) ILCG	(9) IBCG
50-59	1	-	-	-	-	-	-	-	-
60-69	-	-	-	-	-	-	-	-	-
70-79	-	1	-	-	6	3	2	1	1
80-89	4	1	1	2	1	10	6	4	2
90-99	-	-	3	3	6	6	9	5	9
100-109	-	-	-	6	1	2	4	1	4
110-119	-	-	-	1	-	1	2	-	2
120-129	-	-	-	1	-	-	-	-	-
130-139	-	-	-	-	-	-	-	-	-
	5	2	4	13	14	22	23	11	18

<u>Median score</u>	84	75	94	100	88	88	93	90	94
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Examination of the data by the use of the extension of the median
test to ascertain whether there is any difference among the nine
groups with respect to their median scores:

Groups	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
No. above median	0	0	2	11	4	7	12	5	12
No. below median	5	2	2	2	10	15	11	6	6

$$X^2 = 20.16 \text{ on } 8 \text{ d.f. } 0.01 > P > 0.005$$

Thus differences between the groups are significant.

Table 56 Con'td.

Test of significance for differences between selected groups(i) Comparison between children living with families:

MBLWR, ILMB, SCF

$$X^2 = 3.93 \text{ on } 2 \text{ d.f. } 0.25 > P > 0.1. \text{ No significant difference.}$$
(ii) Comparison between the control groups:

$$X^2 = 0.54 \text{ on } 1 \text{ d.f. } 0.5 > P > 0.25. \text{ No significant difference.}$$
(iii) Comparison between children living with families and children in the control groups:

MBLWR + ILMB + SCF versus IBCG + ILCG

$$X^2 = 2.58 \text{ on } 1 \text{ d.f. } 0.25 > P > 0.1. \text{ No significant difference.}$$
(iv) Comparison between children living with families and foster home children:

MBLWR + ILMB + SCF versus IFC

$$X^2 = 8.30 \text{ on } 1 \text{ d.f. } 0.005 > P > 0.001. \text{ Significant difference. Foster home children better.}$$
(v) Comparison between foster home children and children in control groups:

IFC versus IBCG + ILCG

$$X^2 = 1.69 \text{ on } 1 \text{ d.f. } 0.25 > P > 0.1. \text{ No significant difference.}$$

* See Table 25b for details of abbreviations.

TABLE 57

Unadjusted means and Standard Error and the correlation between length of stay in weeks (X) and score (Y)

<u>Homes</u>	<u>Unadjusted values</u>			<u>Correlation Co-efficient</u>
	X	Y	S.E. (Y)	between X and Y
KCH*	63.30	104.46	3.73	- 0.39
LHMB	51.92	94.35	2.54	- 0.33
IBHMB	43.00	74.83	1.94	- 0.23

The correlation coefficients show that there is an inverse relationship between length of stay and the score. The degree of this inverse relationship is about the same in each home.

Because of the difference in the mean length of stay between the three homes, it becomes necessary to adjust the mean score for each home to an equal average length of stay and this is carried out by the usual Analysis of Covariance procedure. The following table shows these adjusted values:

<u>Homes</u>	<u>Adjusted values</u>	
	Y (Mean Score)	S.E. (Y)
KCH	106.99	3.72
LHMB	94.90	2.53
IBHMB	73.82	1.94

The adjustment has raised slightly the mean values for KCH and LHMB while that of IBHMB has been slightly decreased. Comparing the adjusted values in pairs gives the same set of results obtained with the unadjusted values i.e. that there is a significant difference between the homes.

* See Table 25b for details of abbreviations.

TABLE 58COMPARATIVE SCORES ON GRIFFITH'S BABY TESTS

Groups *	No. examined.	Mean I Q			
		14-26 Weeks	27-39 Weeks	40-52 Weeks	53-106 Weeks
ILCG	21	(4) 117	(8) 116	(1) 100	(8) 97
ILMB	6	(0) -	(0) -	(1) 108	(5) 86

Figures in brackets are the number of children examined in the age groups.

* See Table 25b for details of abbreviations.

TABLE 59

THE NUMBER AND CAUSES OF MATERNAL DEATHS
OCCURRING EACH WEEK SINCE CHILDBIRTH

Study Groups [*]	No.	Obstetric causes						Non-obstetric causes
		1st Week	2nd Week	3rd Week	4th Week	5th Week	6th Week	Over 6 weeks
IBHMB	46	27	8	1	-	-	-	10
LHMB	25	19	-	-	-	-	-	6
KCH	20	19	-	-	-	-	-	1
IFC	13	11	-	-	-	-	-	2
SCF	20	5	1	1	-	1	-	12
ILMB	30	10	1	-	-	-	1	18
MBLWR	37	17	1	-	-	2	-	17
Total	191	108	11	2	-	3	1	66
% of Total	100%	56%	6%	1%	-	1%	1%	35%

* See Table 25b for details of abbreviations.

TABLE 60

CAUSES OF SEPARATION OF MOTHER FROM CHILD

Study Groups	No. of child- ren	Marital problem		Aband- onment	Death of mother		Insa- nity	Civil War
		Separated	Divorced		Child- birth	Other causes		
IBHMB	50	-	-	8%	78%	14%	-	-
LHMB	30	-	7%	10%	63%	20%	-	-
KCH	20	-	-	-	95%	5%	-	-
IFC	30	7%	-	40%	36%	7%	7%	3%
SCF	20	-	-	-	40%	60%	-	-
ILMB	30	-	-	-	40%	60%	-	-
MBLWR	37	-	-	-	54%	46%	-	-

* See Table 25b for details of abbreviations.

TABLE 61

CLASSIFICATION OF THE OCCUPATIONS
OF FATHERS OF MOTHERLESS BABIES IN
THE VARIOUS GROUPS

Study Groups [*]	No.	Agricu- ltural	Trading and Cle- rical	Admini- strative and Pro- fessional	Crafts- men	Other Occup- ations	Un- known
IBHMB	50	32%	8%	10%	2%	10%	38%
LHMB	30	3%	40%	3%	13%	13%	27%
IFC	30	17%	-	-	17%	26%	40%
SCF	20	45%	40%	5%	5%	5%	-
ILMB	30	50%	3%	3%	17%	27%	-
MBLWR	37	36%	22%	19%	-	23%	-

* See Table 25b for details of abbreviations

TABLE 62

FREQUENCY OF VISITS BY RELATIVES

The number of children visited are expressed as a percentage of the total number in that group.

FREQUENCY OF VISITS

Study # Groups	No.	Regularly	Fairly Regularly	Occas- ionally	No Contact	
					With Relative	Without Re- lative
IBHMB	33 ^o	5 (15%)	5 (15%)	18 (55%)	3 (9)	2 (6%)
KCH	20	-	2 (10%)	16 (80%)	2 (10%)	-
LHMB	30	6 (20%)	6 (20%)	10 (33%)	5 (17%)	3 (10%)

^o 33 out of the total of 50 children examined in Ibadan Home were in care long enough to obtain an impression of frequency of visits.

See Table 25b for details of abbreviations.

TABLE 63.TABLE SHOWING RELATIVE FREQUENCY OF VISITS OF INSTITUTIONCHILDREN BY RELATIVES IN RELATION TO DISTANCE OF FAMILYHOME TO INSTITUTION:

DISTANCE OF FAMILY HOME TO INSTITUTION (IN MILES)	REGULARLY	FAIRLY REGULARLY	OCCASIONALLY	NO CONTACT	TOTAL
0-	xx xxxxxxx xx				11
5-		xxxxxxxxxx	xxxxxxxxxx xxxxxxxxxx	xxxxxx	38
10 +		xx	xxxxxxxxxx xxxxxxxxxx x x x	xxxx	29
NOT KNOWN				xxxxx	5
TOTAL	11	13	44	15	83

'x' REPRESENTS EACH CHILD VISITED.

REGULARLY = ONCE A WEEK.

FAIRLY REGULARLY = ONCE IN TWO WEEKS.

OCCASIONALLY = ONCE A MONTH AND OVER A MONTH.

TABLE 64

COST OF CARE OF MOTHERLESS BABIES
IN INSTITUTIONS, FOSTER HOMES AND
FAMILY HOMES

	Groups	Average no. of children in care	Monthly Ex- penditure	Cost per child per week	Cost in ratio to ILMB cost
Study Groups	IBHMB [*]	35	£360.10s.	£2.11s.6d	1:7
	LHMB	40	£500	£3.2s.6d	1:9
	KCH	25	£315	£3.3s.	1:9
	IFC	30	£90	15s.	1:2
	ILMB	30	£42.19s.	7s.2d	1:1

* See Table 25b for details of abbreviations.

TABLE 65

POPULATION DISTRIBUTION AND NUMBER OF
FAMILY COMPOUNDS OR HOUSES IN THE AREAS
IN IBADAN WHERE THE COMMUNITY OPINION
SURVEY WAS CARRIED OUT

Area	Population	No. of family Compounds	No. of Houses
Oja Iba	27,994	68	None
Oke Ado	33,687	None	1,534
Bodija	5,602	None	421

Source: Ministry of Economic Planning.

TABLE 66

KNOWLEDGE OF THE DIFFERENT METHODS OF
CARE OF MOTHERLESS BABIES ACCORDING TO
OCCUPATIONAL GROUP IN IBADAN

"Do you think the different methods of care are publicised enough?"

(1) Yes (2) No (3) Don't know.

Types of Responses	Agricultural	Crafts-men	Trading & Clerical	Administrative & Professional	Others	Total
Yes	%	11(37%)	63 (45%)	20 (31%)	22(37%)	116
No	4 (100%)	19(63%)	76 (55%)	45 (69%)	40(63%)	184
Don't know	-	-	-	-	-	-
Total number interviewed	4(100%)	30(100%)	139(100%)	65(100%)	62(100%)	300

TABLE 67

KNOWLEDGE OF DIFFERENT METHODS OF CARE OF MOTHERLESS

BABIES ACCORDING TO OCCUPATIONAL GROUP IN ILORA

Do you think the different methods of care are publicised enough?

(1) Yes (2) No (3) Don't know

Types of responses	Agricul- tural	Craftsmen	Trading & Clerical	Administrative & Professional	Others	Total
Yes	-	2 (40%)	57 (30%)	3 (33%)	6 (11%)	68
No	-	3 (60%)	132 (70%)	6 (67%)	47 (89%)	188
Don't know	-	-	-	-	-	-
Total number interviewed ‡	0	5 (100%)	189(100%)	9 (100%)	53 (100%)	256

‡ Although 260 were approached, 4 did not cooperate.

TABLE 68

SOURCES OF INFORMATION AS REGARDS THE VARIOUS
METHODS OF CARE

Source of Information	<u>IBADAN</u>	<u>ILORA</u>
	Number interviewed = 116	Number interviewed = 68
Redifussion	37 (32%)	18 (27%)
*Other news media	41 (35%)	3 (4%)
Neighbours	10 (9%)	46 (68%)
+Others	28 (24%)	1 (1%)
Total	116 (100%)	68 (100%)

* Other news media include newspapers, magazine, radio, and television.

+ Others include relatives, and the church etc.

TABLE 69

ACCEPTANCE OF ABANDONED MOTHERLESS BABIES ACCORDING TO FAMILY SIZE IN
IBADAN

Would you take an abandoned motherless baby into your home?

(1) No (2) Yes (3) Don't know.

Types of response	Number of children in the family						Total
	0	1	2	3	4	4+	
Yes	6 (46%)	13 (30%)	19 (35%)	20 (33%)	20 (33%)	24 (36%)	102
No	7 (54%)	30 (70%)	35 (65%)	41 (67%)	42 (63%)	42 (63%)	197
Don't know	-	-	-	-	-	1 (1%)	1
Total number interviewed	13 (100%)	43 (100%)	54 (100%)	61 (100%)	62 (100%)	67 (100%)	300

Analysis of 'Yes' Responses

	Number of children in the family					
	0	1	2	3	4+	
Number willing to adopt	5	6	10	13	12	20
Number willing to foster	1	7	9	7	8	4
Total	6	13	19	20	20	24

TABLE 70

ACCEPTANCE OF ABANDONED MOTHERLESS BABIES ACCORDING TO FAMILY SIZE IN
ILORA

Types of responses	Number of children in the family						Total
	0	1	2	3	4	4+	
Yes	5 (31%)	2 (6%)	4 (6%)	1 (2%)	3 (6%)	0%	15
No	11 (69%)	32 (94%)	65 (94%)	46 (98%)	52 (94%)	35 (100%)	241
Don't know	0%	0%	0%	0%	0%	0%	-
Total number interviewed	16(100%)	34(100%)	69(100%)	47(100%)	55(100%)	35 (100%)	256

Analysis of the 'Yes' Answer Group

Number of children in the family	0	1	2	3	4	4+
Number willing to adopt	4	2	3	0	3	0
Number willing to foster	1	0	1	1	0	0
Total number interviewed	5	2	4	1	3	0

TABLE 71REASONS FOR NON-ACCEPTANCE OF ABANDONED MOTHERLESS
BABIES

Reasons for Non-acceptance of abandoned mother- less babies	<u>IBADAN</u> Number inter- viewed = 197	<u>ILORA</u> Number inter- viewed = 241
Has sufficient respons- ibility already	109 (55%)	140 (58%)
Fears the child may die	13 (6%)	42 (17%)
Relatives of child not known	62 (31%)	24 (10%)
Fears what people might say	5 (3%)	16 (7%)
Too old to take care of the child	7 (4%)	5 (2%)
No reason given	1 (1%)	14 (6%)
Total	197 (100%)	241 (100%)

TABLE 72PLACEMENT PREFERENCE ACCORDING TO LOCALITY

Type of placement	IBADAN	ILORA
Institution	162 (54%)	54 (21%)
Within the family structure	127 (42%)	199 (78%)
Fostering	11 (4%)	3 (1%)
Total	300 (100%)	256 (100%)

APPENDIX B

Extracts from Separates of the
Laws of Western Nigeria.

Pages 93 - 97.

APPENDIX BCHILDREN AND YOUNG PERSONS LAW^{*}

A LAW TO MAKE PROVISION FOR THE WELFARE OF THE
YOUNG AND THE TREATMENT OF YOUNG OFFENDERS AND
FOR THE ESTABLISHMENT OF JUVENILE COURTS

L. of N.
1948,
Cap. 31

(1st July, 1946)

Date of
commence-
ment.

PART I

PRELIMINARY

1. (1) This law may be cited as the children
and Young Persons Law.

Short title
and
application

(2) The Governor in Council may be
ordered direct that this Law or any part or
provision thereof shall apply to the Region
or to any area therein, (1).

2. In this Law -

Interpreta-
tion

"approved institution" means an institution
established under section 25 or any place or
institution declared to be an approved insti-
tution under the provisions of that section;

"authorised officer" means a person appointed
by the Minister for the purposes of this Law
and includes a probation officer;

"child" means a person under the age of
fourteen years;

* Extracted from Separates of the Laws of Western Nigeria
incorporating Chapter 20 of the Laws of Western Nigeria,
1959 and Western Region Legal Notice 456 of 1958.

"corrective order" means a corrective order issued under sections 14 or 33 in accordance with Part IV;

"guardian" in relation to a child or young person includes any person who, in the opinion of the court having cognisance of any case in relation to a child or young person or any case in which a child or young person is concerned, has for the time being the charge of or control over the child or young person;

"juvenile court" means a court constituted under the provisions of section 6 for the hearing and determination of cases relating to children or young persons;

"the Minister" means the Regional Minister charged with responsibility for social welfare matters;

"probation officer" means a person appointed under this law to be a probation officer and where the context so admits includes a deputy probation officer or an assistant probation officer;

"young person" means a person who has attained the age of fourteen years and is under the age of seventeen years.

PART V

JUVENILES IN NEED OF CARE OR PROTECTION

33. (1) Any local government council, any police officer or any authorised officer, having reasonable ground for believing that a child or young person comes within any of the descriptions hereinafter mention -

Power to bring before a juvenile court in certain cases.

- (a) who is an orphan or is deserted by his relatives; or
- (b) who has been neglected or ill-treated by the person having the care and custody of such child; or
- (c) who has a parent or guardian who does not exercise proper guardianship; or

- (d) who is found, destitute, and has both parents or his surviving parent, undergoing imprisonment; or
 - (e) who is under the care of a parent or guardian who, by reason of criminal or drunken habits, is unfit to have the care of the child; or
 - (f) who is the daughter of a father who has been convicted of an offence under section 156 of the Criminal Code in respect of any of his daughters; or
- Cap.
28,
- (g) who is found wandering and has no home or settled place of abode or visible means of subsistence; or
 - (h) who is found begging or receiving alms, whether or not there is any pretence of singing, playing, performing, offering anything for sale or otherwise, or is found in any street, premises, or place for the purpose of so begging or receiving alms; or
 - (i) who accompanies any person when that person is begging or receiving alms, whether or not there is any pretence of singing, playing, performing, offering anything for sale, or otherwise; or
 - (j) who frequents the company of any reputed thief or common or reputed prostitute; or
 - (k) who is lodging or residing in a house or the part of a house used by any prostitute for the purpose of prostitution, or is otherwise living in circumstances calculated to cause, encourage or favour the seduction or prostitution of the child; or
 - (l) in relation to whom an offence under Chapter XIX of the Criminal Code has been committed or attempted; or
 - (m) who having been born or brought within the Protectorate would, but for the provisions of the law relating to the legal status of slavery be a slave; or
 - (n) who is otherwise exposed to moral danger, may bring that child or young person before a juvenile court.

20.

(2) The court, if satisfied that the child or young person comes within any of the paragraphs in sub-section (1) may -

(a) make a corrective order -

(i) sending him to an approved institution;
or

(ii) committing him to the care of any fit person whether a relative or not, who is willing to undertake the care of him; or

(b) order his parent or guardian to enter into a recognisance to exercise proper care and guardianship; or

(c) without making any other order, or in addition to making an order under either of the two last preceding paragraphs, make an order placing him for a specified period, not exceeding three years, under the supervision of a probation officer, or of some other person appointed for the purpose by the court:

Provided that a child shall not be deemed to come within the scope of paragraph (j) of sub-section (1) if the only common or reputed prostitute whose company such child frequents is the mother of such child and it is proved that she exercises proper guardianship and due care to protect the child from contamination.

(3) For the purposes of paragraph (n) of sub-section (1), but without prejudice to the generality of the words thereof, the fact that a child or young person is found destitute, or is found wandering without any settled place of abode, and without visible means of subsistence, or is found begging or receiving alms, whether or not there is any pretence of singing, playing, performing or offering anything for sale, or is found loitering for the purpose of so begging or receiving alms, shall be evidence that he is exposed to moral danger.

(4) Any court before which a person is convicted of having committed in respect of a child or young person any offence referred to in paragraph (f) or paragraph (1) of sub-section (1) may direct that the child or young person be brought before a juvenile court with a view to that court making such order under that sub-section as may be proper, or, if satisfied that the material before it is sufficient

"Moral
danger"

to enable it properly to exercise jurisdiction, may notwithstanding anything in Part II, itself make any order which the juvenile court might make.

34. Where the parent or guardian of a child or young person proves to a juvenile court that he is unable to control the child or young person, the court, if satisfied -

Where
parent
or guard-
ian
unable to
exercise
control.

- (a) that it is expedient so to deal with the child or young person, and
- (b) that the parent or guardian understands the results which will follow from and consents to the making of the order,

may make a corrective order in respect of such child or young person or may order him to be placed for a specified period, not exceeding three years, under the supervision of a probation officer or of some other person appointed for the purpose by the court.

APPENDIX C

Questionnaire for collecting data
on the child.

Pages 98 - 105

APPENDIX CQuestionnaire for collecting data on the child

Date of Examination

Identification data

Name
 Surname Other names

Address Present address
 Usual (Home) Address
 Farm (if any) address

Age in years and months

Sex Male 1
 Female 2

1
☐

Present standing height or }feet
 Length of baby } inches
 Give to the nearest $\frac{1}{4}$ inch

Weight without clothes ,

 Give to the nearest $\frac{1}{4}$ lb.

Hair Normal texture
 Abnormal texture

(a) Thin 1
 (b) Dyspigmented 2
 (c) Easy to uproot 3
 (d) a+b+c 4

2
☐

Ear, nose and throat

<u>Ears</u>	Normal	0	
	Otitis media	1	
	Otitis externa	2	
	Wax in ear	3	3 <input type="checkbox"/>
	Foreign body in ear	4	
<u>Throat</u>	Normal	0	
	Thrush infection of	1	
	Tonsillitis	2	4 <input type="checkbox"/>
	Enlarged tonsils, but not inflamed	3	
<u>Nose</u>	Normal	1	5 <input type="checkbox"/>
	Rhinitis	2	
<u>Eyes</u>	Normal	0	
	Conjunctivitis	1	6 <input type="checkbox"/>
	Strabismus	2	
	Others, specify	3	
<u>Skin</u>	Healthy and clear	1	
	Scabies	2	7 <input type="checkbox"/>
	Ringworm	3	
	Others, specify	4	

.....

Lymph glands

Not enlarged	0
Enlarged (a) Cervical	1
(b) Axillary	2
(c) Inguinal	3
(d) a + b	4
(e) b + c	5
(f) a+b+c	6

8

Teeth

Not yet erupted	0
Erupted	
Normal	1
(a) Dental caries	2
(b) Malposition of teeth	3
(c) a + b	4

9

Facial marks

Present	1
Absent	2

10

Scarification

Present	1
Absent	2

11

Charms

Present 1

12

☐

Absent 2

Specify where charm is worn

.....

Cardiovascular SystemHeart sounds

Normal 0

Cardiac murmurs 1

13

☐

Extrasystoles 2

Others (specify) 3

Lungs

Normal breath sounds 1

14

☐

Abnormal breath sounds 2

Chest

Normal shape 1

Abnormal shape

15

☐

Harrison's sulcus 2

Pigeon chest 3

Others 4

Specify

.....

Liver and Spleen

Liver Not enlarged 1

16
☐

Enlarged 2

Spleen Not enlarged 1

17
☐

Enlarged 2

Nervous System

Normal 1

Abnormal

Meningocele 2

18
☐

Spastic 3

Others 4

Specify

.....

OTHER PARTICULARS ABOUT CHILD

Age of child when mother died or when child separated from
mother years months

Has child had any other care before coming in to care?

Yes 1

No 2

Don't know 3

19
☐

In the interval between separation from mother and coming into care, how has child been fed?

- (a) Artificially 1
- (b) Wet nursing 2
- (c) Water only 3
- (d) Pap only (Native porridge
made from
corn) 4
- (e) Normal diet of the
family 5
- (f) a + c 6
- (g) b + c 7
- (h) Don't know 8

20

☐

Relevant Facts About Family (If Known)

Father Is father alive?

Yes 1

21

No 2

☐

If yes, Name Surname

Other names

Religion Christian 1

Moslem 2

22

No religion 3

☐

Other, specify. 4

Occupation

Petty trader	1	
Farmer	2	
Carpenter	3	23 <input type="checkbox"/>
Teacher	4	
Soldier	5	
Other: specify	6	.....
	

Has father other wives?

Yes	1	
No	2	24 <input type="checkbox"/>

If yes how many

One	1	
Two	2	
Three	3	
Four	4	25 <input type="checkbox"/>
More than four	5	

Has father other dependants?

Yes	1
No	2

If yes, state how many

One 1
Two 2
Three 3
Four 4
4 + 5

26
☐

Was mother's last confinement uneventful?

Yes 1
No 2

27
☐

If no, has the last childbirth any contributory factor
to ultimate death of mother?

Yes 1
No 2

28
☐

If yes, specify the likely cause of death

.....

If no, again specify the most likely cause of death.

.....

.....

If death is not the cause of mother-child separation
specify e.g.

Abandonment 1
War victim 2
Other, 3
specify

29
☐

.....

APPENDIX D

Copy of child's progress sheet
used in the prospective study.

Page 106

[illegible]

APPENDIX E

Questionnaire for the community
opinion surveys

Pages 107-109

APPENDIX E

Questionnaire for the community opinion surveys

Name:

Surname:

Other names:

Address:

.....

Age: Years

..... Months

Occupation

Housewife 1

Teacher 2

Nurse 3

Petty trader 4

Business-woman/man 5

Others, specify 6

1
☐

Marital Status

Married 1

Single 2

Separated 3

Divorced 4

2
☐

Number of children

One	1
Two	2
Three	3
Four	4
More than four	5
None	

3

What type of placement would you advocate for a motherless baby?

(a) Placement away from his family 1

(b) Placement with the family 2

4

If answer is (a), will you prefer

(a) Institution 1

(b) Foster Home 2

(c) Don't know 0

5

In your own opinion, do you think the different methods of substitute care are publicised enough?

Yes 1

No 2

6

If yes, where do you get your information from?

Television 1

Rediffusion 2

Newspapers 3

Magazines 4

Neighbour 5

Others, specify

Would you take an abandoned motherless baby into your home?

Yes 1

No 2

Don't know 0

If no, give your reasons

If yes, would you prefer to

(a) Foster 1

(b) Adopt (if
 possible) 2

(c) Don't know 0

APPENDIX F

Suggested proformas for use in motherless
babies institutions.

- I Admission notes - CHILD
- II Admission notes - FAMILY
- III Progress notes - CHILD
 - (a) Physical development
 - (b) Mental development
- IV Discharge notes - CHILD

APPENDIX F

Suggested proformas for use in motherless babies'
institutions.

I. Admission notes - CHILD

Name Date of birth
Date of admission
Address of Parents (If Known) Age on admission
..... (or estimated age)
Present weight Age when separated
..... from mother
Present height or length
Reason for coming into care
.....
Cause of mother-child separation

Clinical Examination

General appearance
.....
Cardiovascular system
.....
Respiratory System
.....
Central nervous system
.....
Urino-genital system
.....
Alimentary System
.....

II Admission notes - FAMILYFather

Name Occupation

Home address Religion

Marital Status

Family size

Mother

Marital Status

No. of previous still births

No. of live births

No. of children alive

Any ante natal care during last pregnancy?

If 'yes', where?

Place of confinement

Age at death Cause of death
 (if known) (If known)

III Progress notes - CHILD

(a) Physical development

[illegible]

* Nature of illness, treatment, admission to hospital, length of stay in hospital, deaths, causes of death must be recorded.

Progress notes -CHILD
(b) Mental development

Name Date of Birth
Date of admission Age on admission

<u>Milestone</u>	<u>Average</u>	<u>Reported</u>
Smile in response	6w	
Vocalise with smile	8w	
Go for and get object not placed in hand	20 w	
Roll over	26 w	
Sit alone short time (no support)	28w	
Stand holding on to cot or play-pen	36w	
Crawl (on abdomen)	40w	
Pull to stand, no help	40w	
Creep on hands and knees	44w	
One word with meaning	44w	
Cruise (i.e. on hands and knees)	48w	
Walk with no support	13m	
Spoon feeding	15m	
Ask for pottie	15-18m	
Dry by day	18m	
Dry by night	2 yrs	
Words together	21-24 m	
Dress fully apart from buttons	3 yrs	

IV Discharge notes - CHILD

APPENDIX G

Figures 17 - 52: Graphs of heights
and weights of motherless babies in
different groups and of children in
the control groups.

FIG. 17.

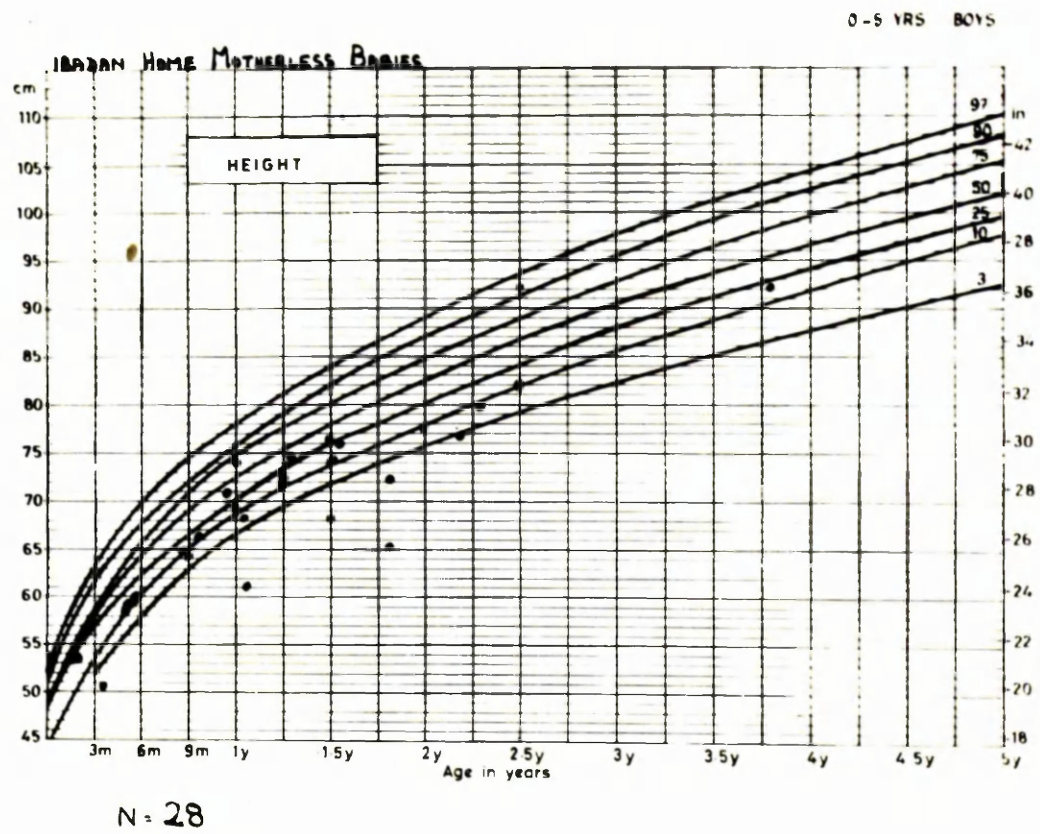


FIG. 18.

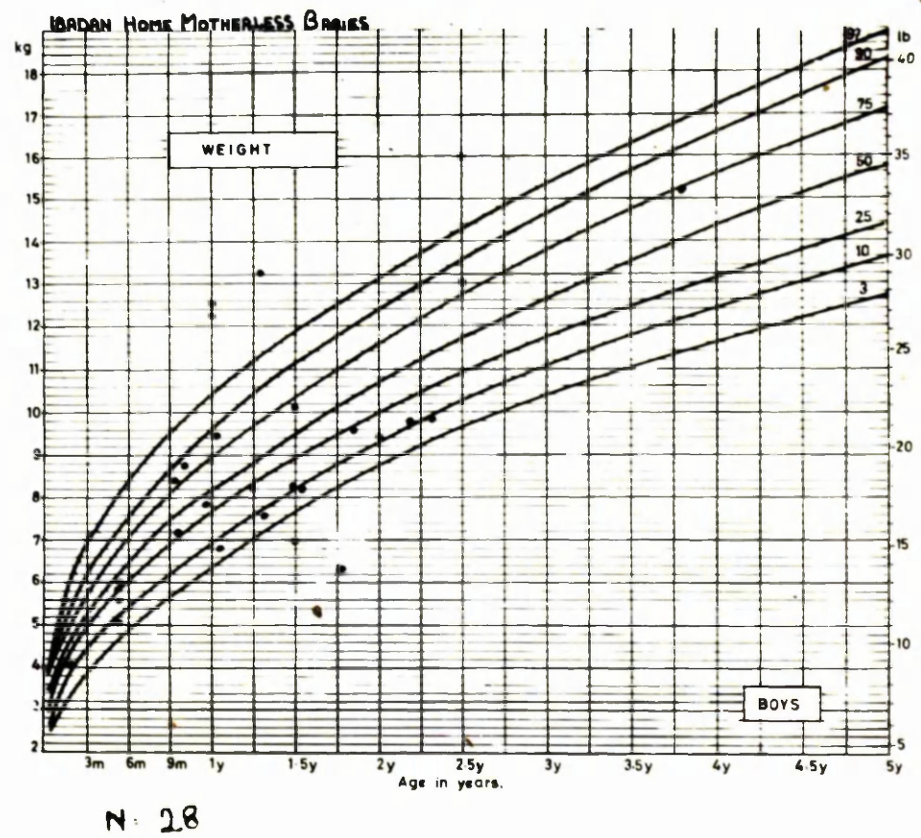


FIG. 19

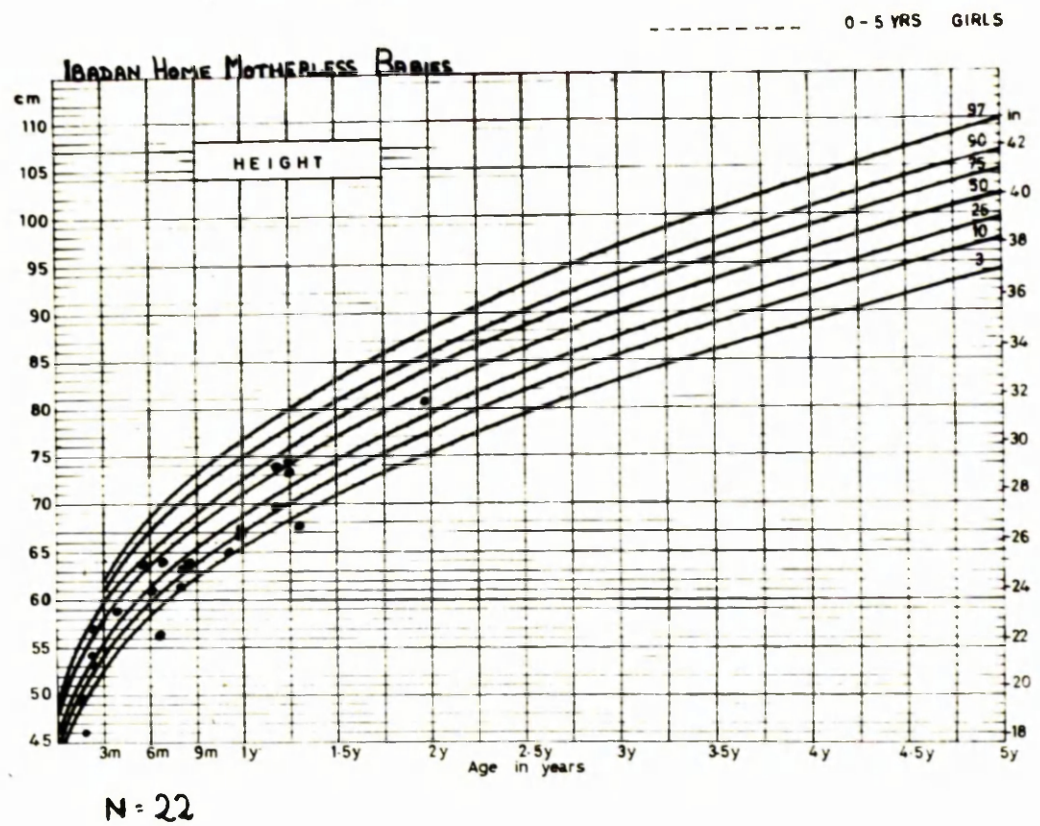


FIG. 20

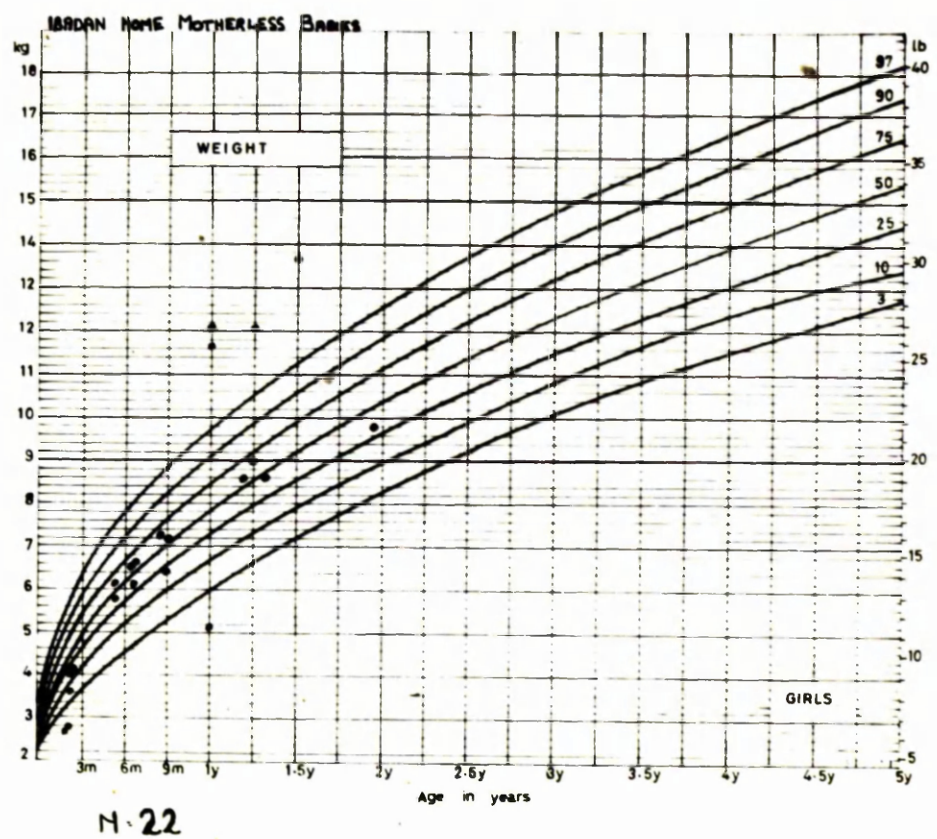
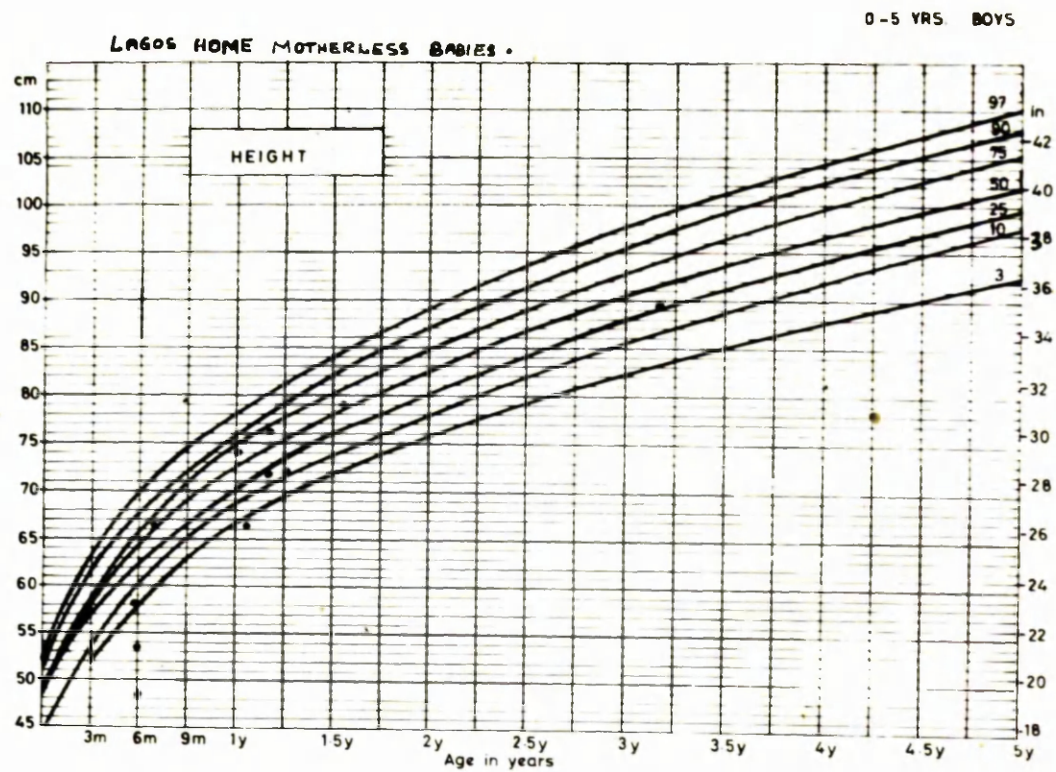
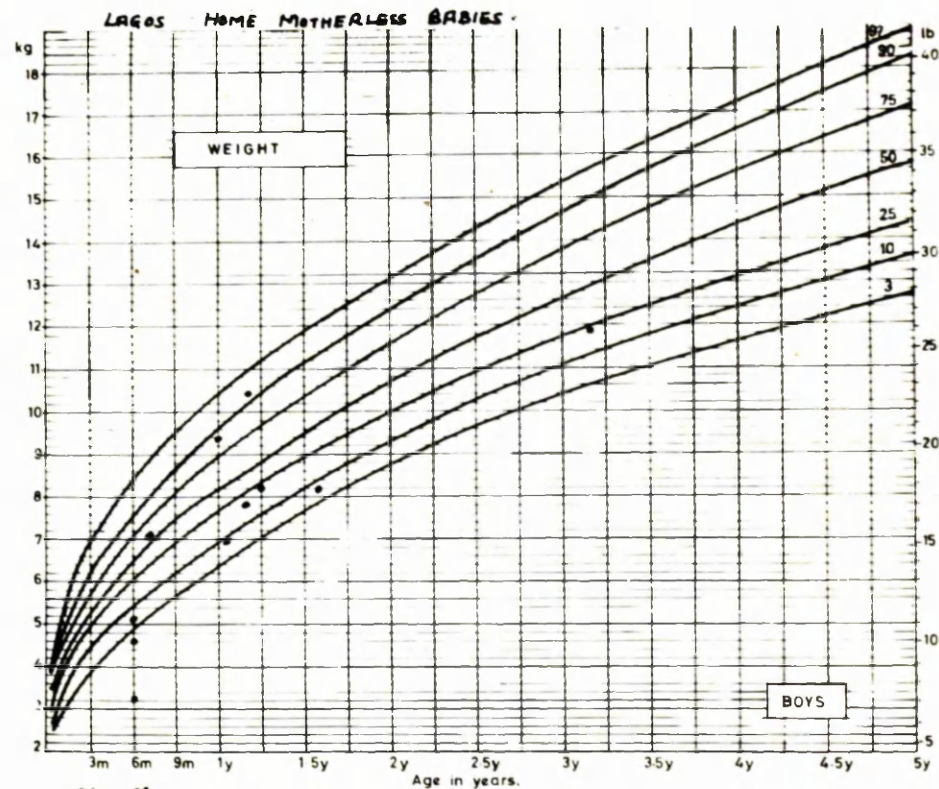


FIG. 21



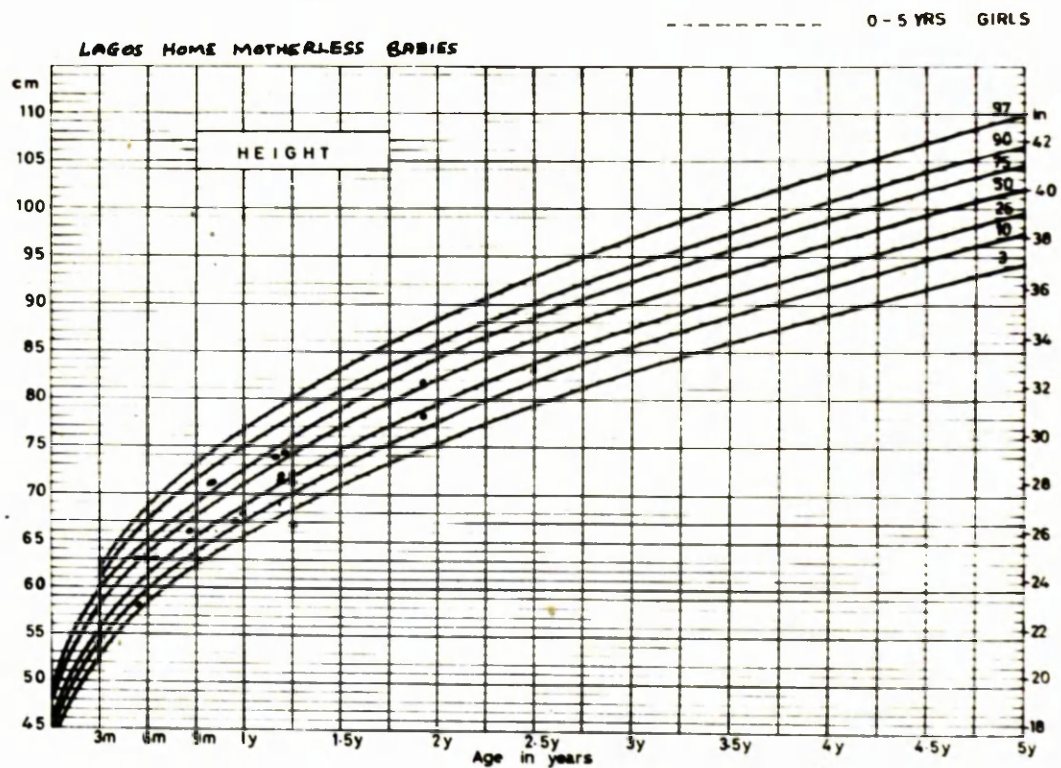
N = 11

FIG. 22



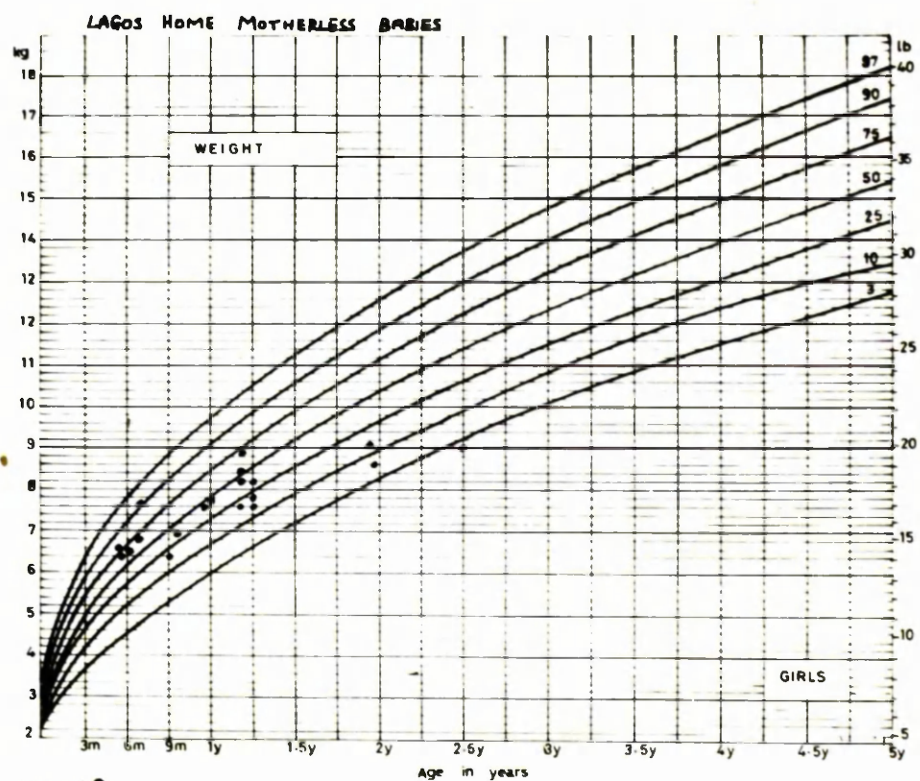
N = 11

FIG. 23



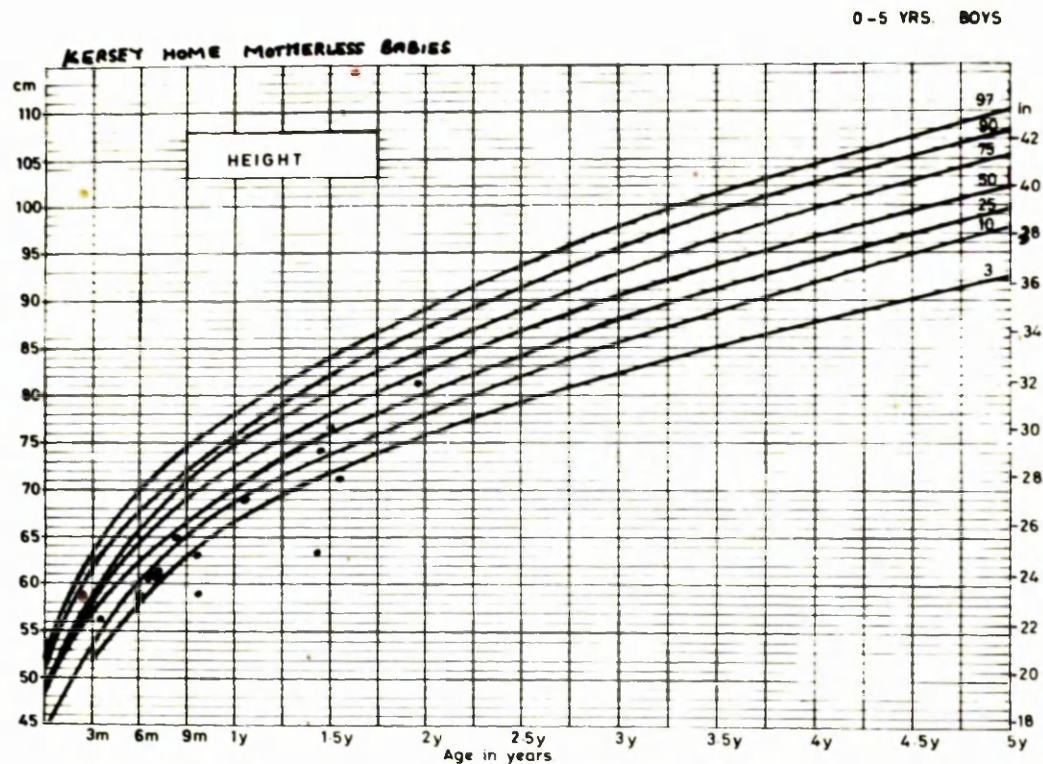
N = 19

FIG. 24



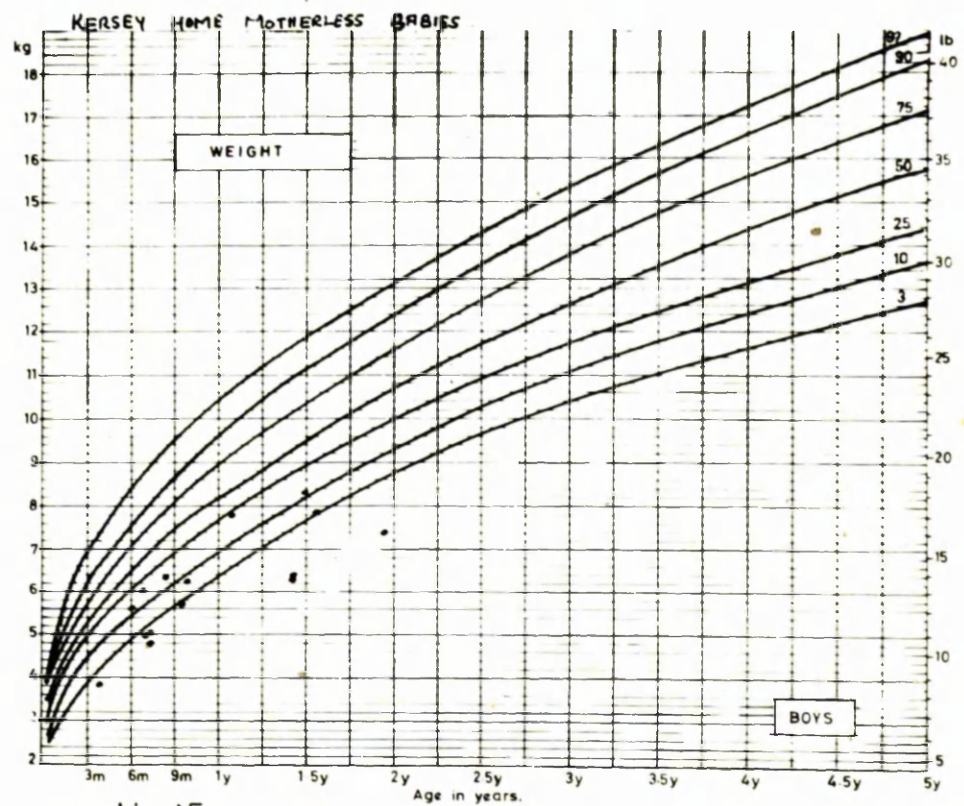
N = 19

FIG. 25



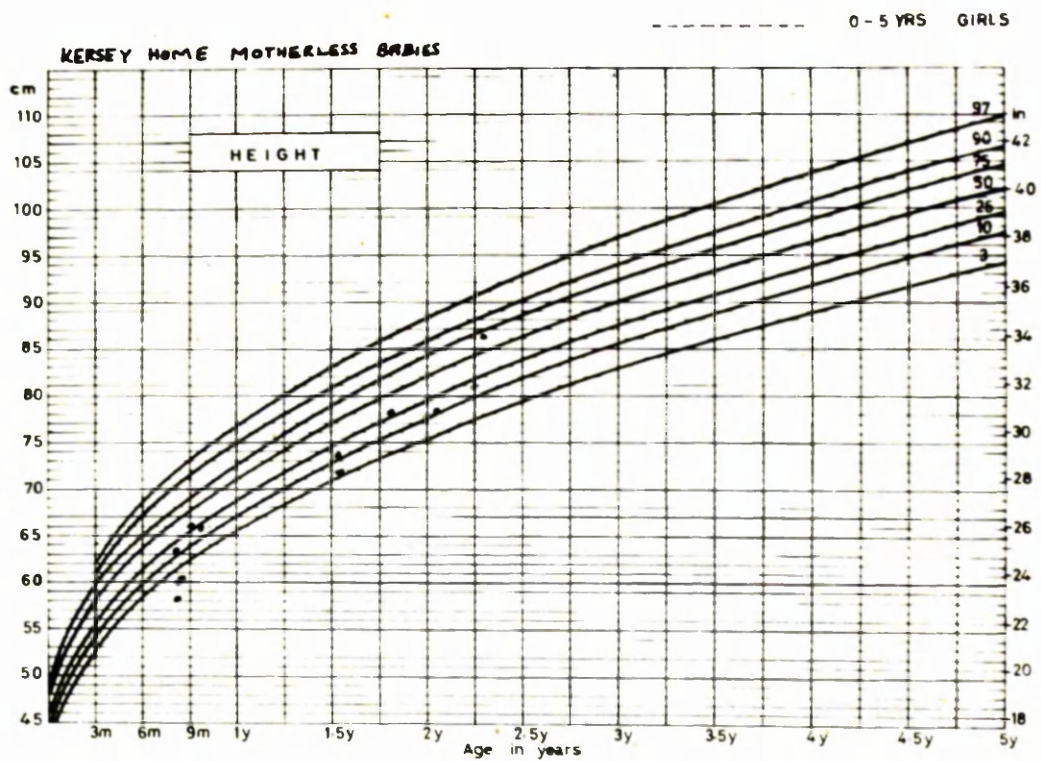
N = 15

FIG. 26



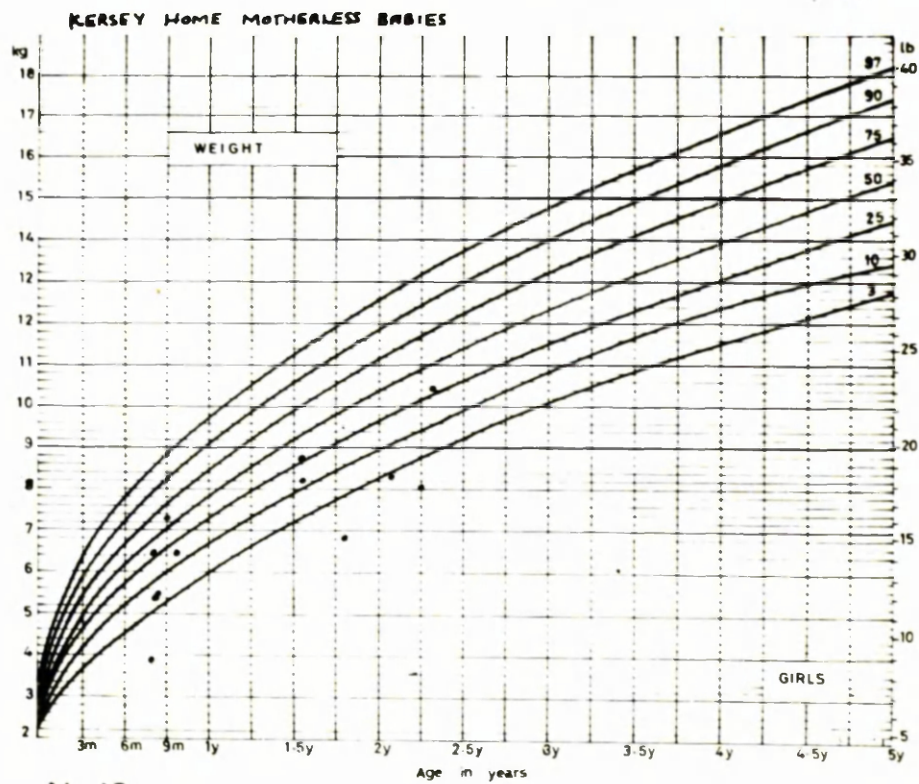
N 15

FIG. 27



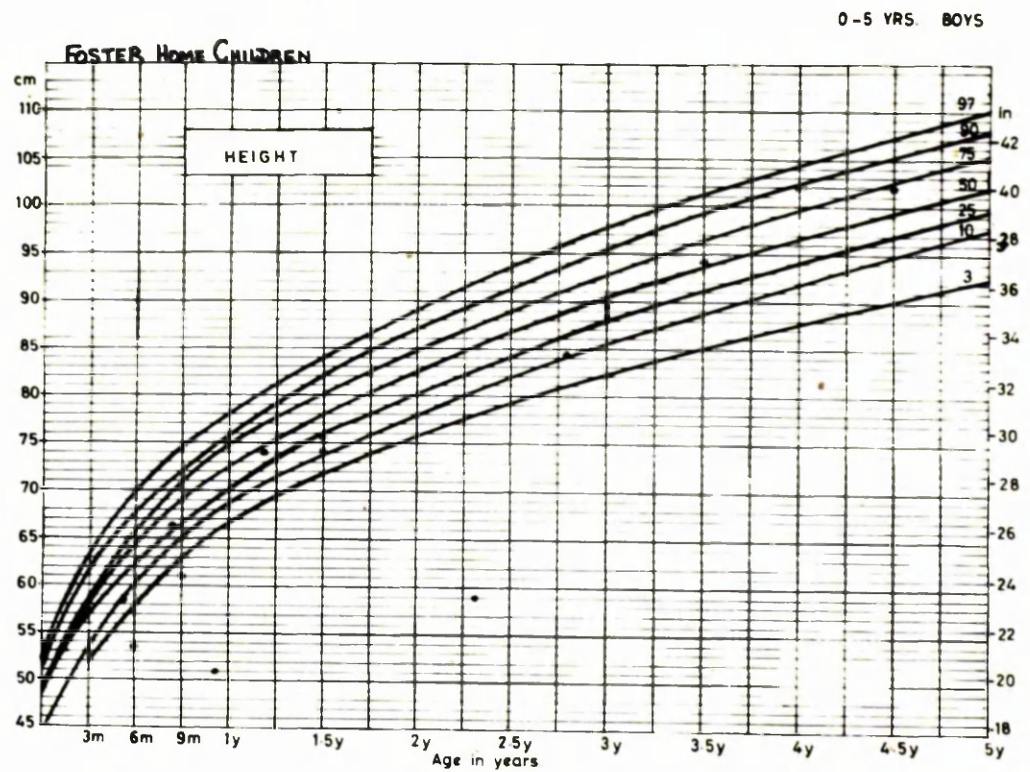
N = 12

FIG. 28



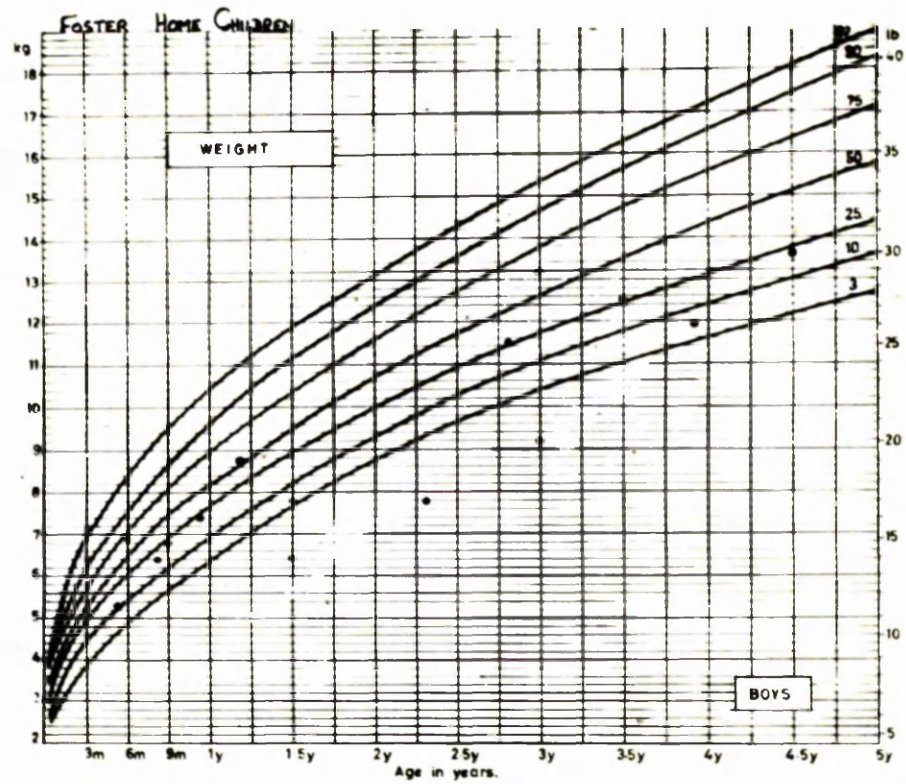
N = 12

FIG. 29



N-15

FIG. 30



N-15

FIG. 31

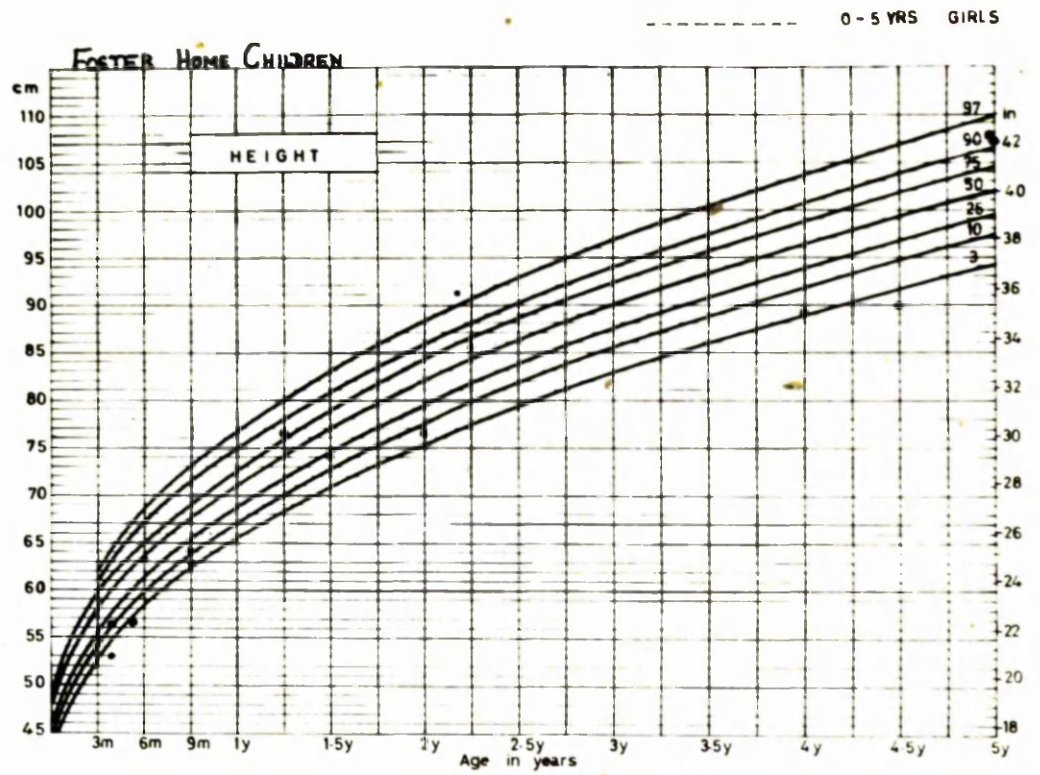


FIG. 32

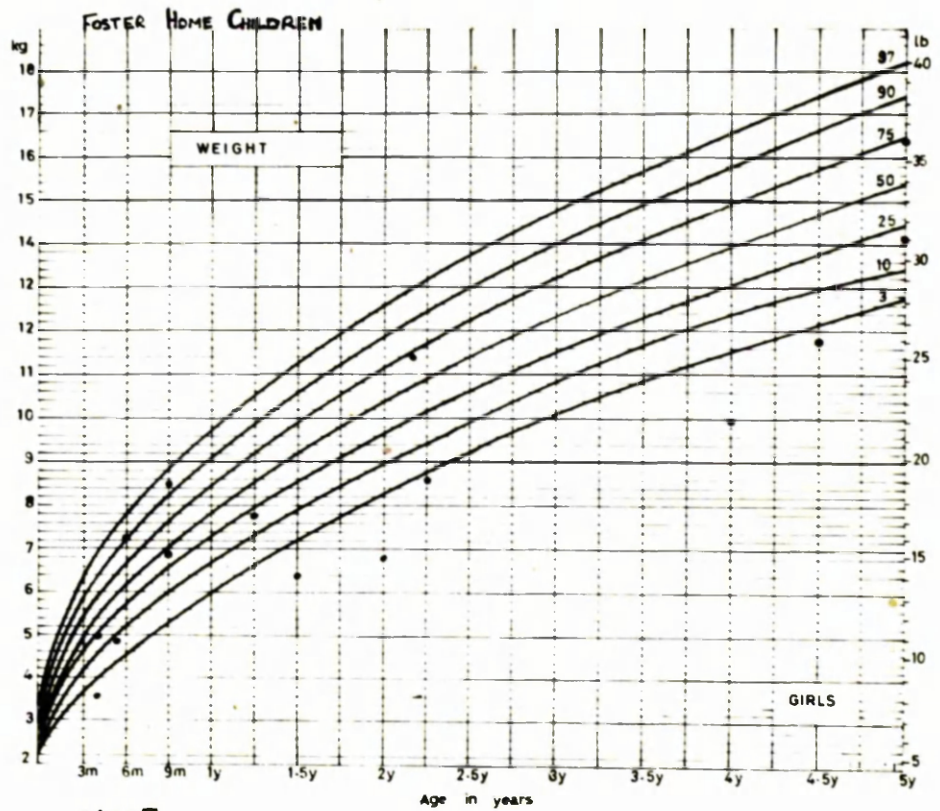
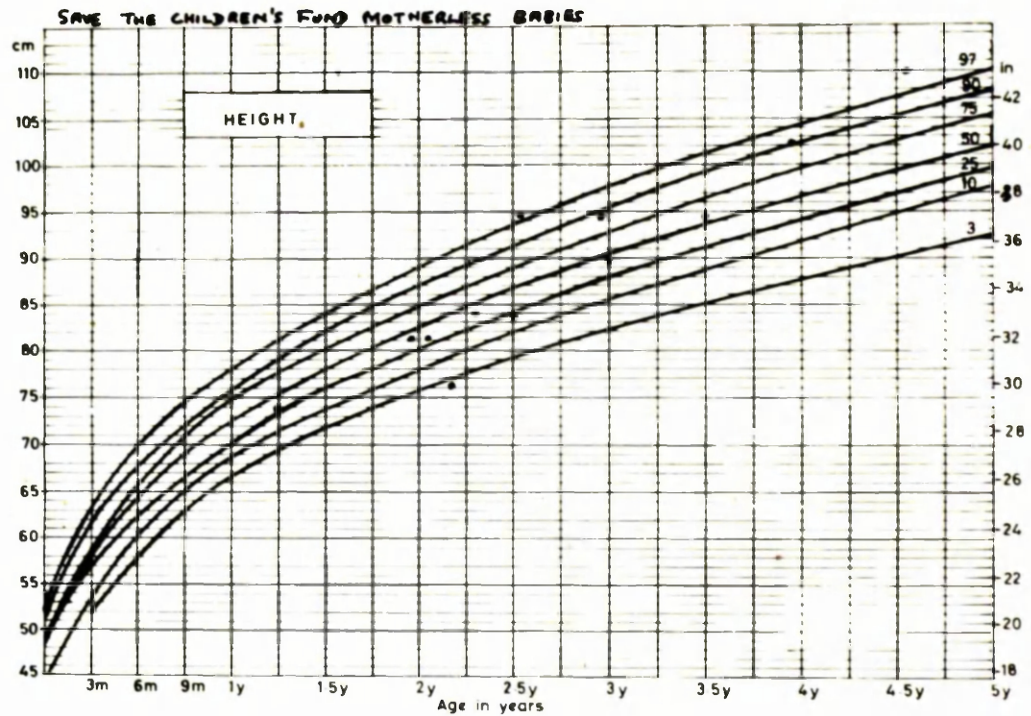


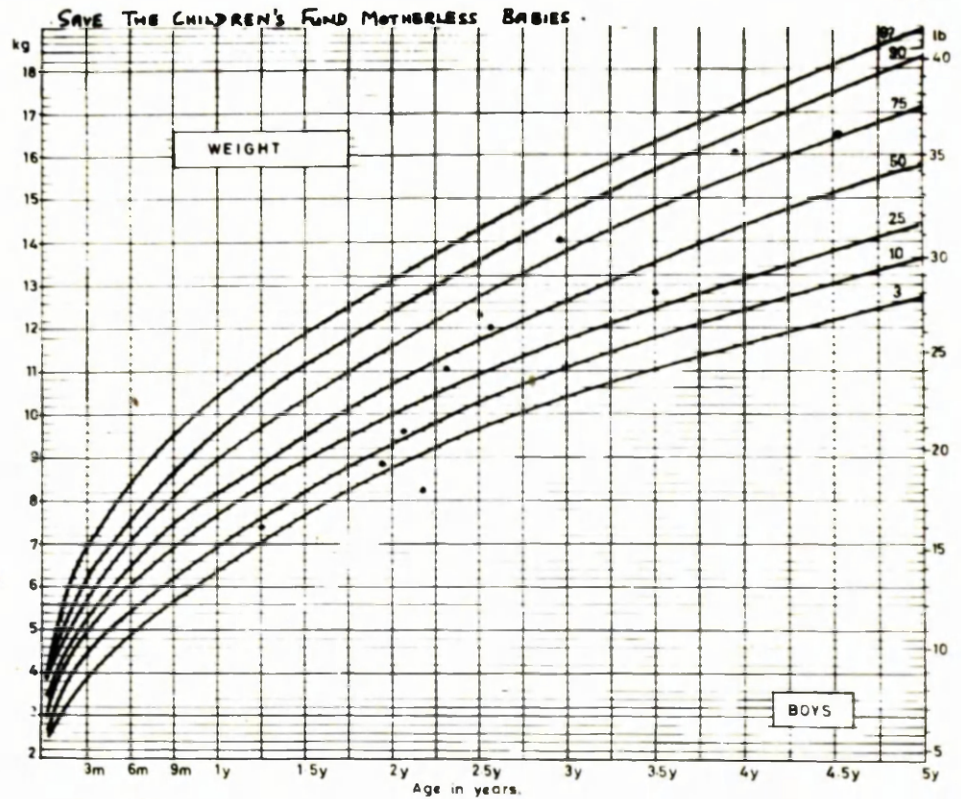
FIG. 33

0-5 YRS BOYS



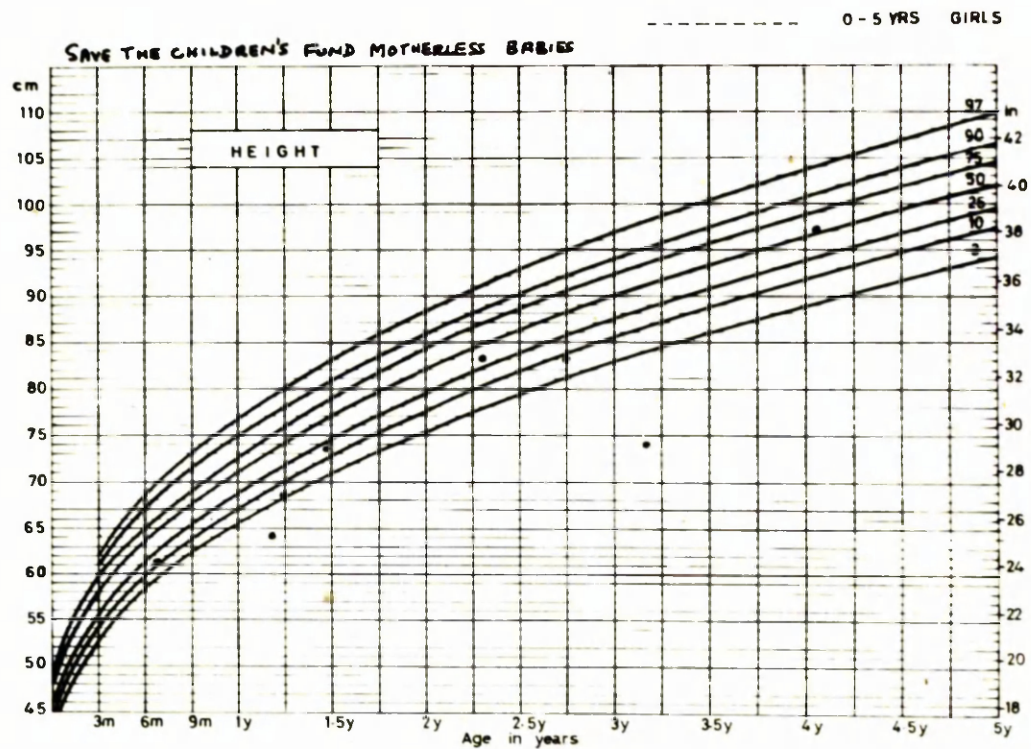
N = 12

FIG. 34



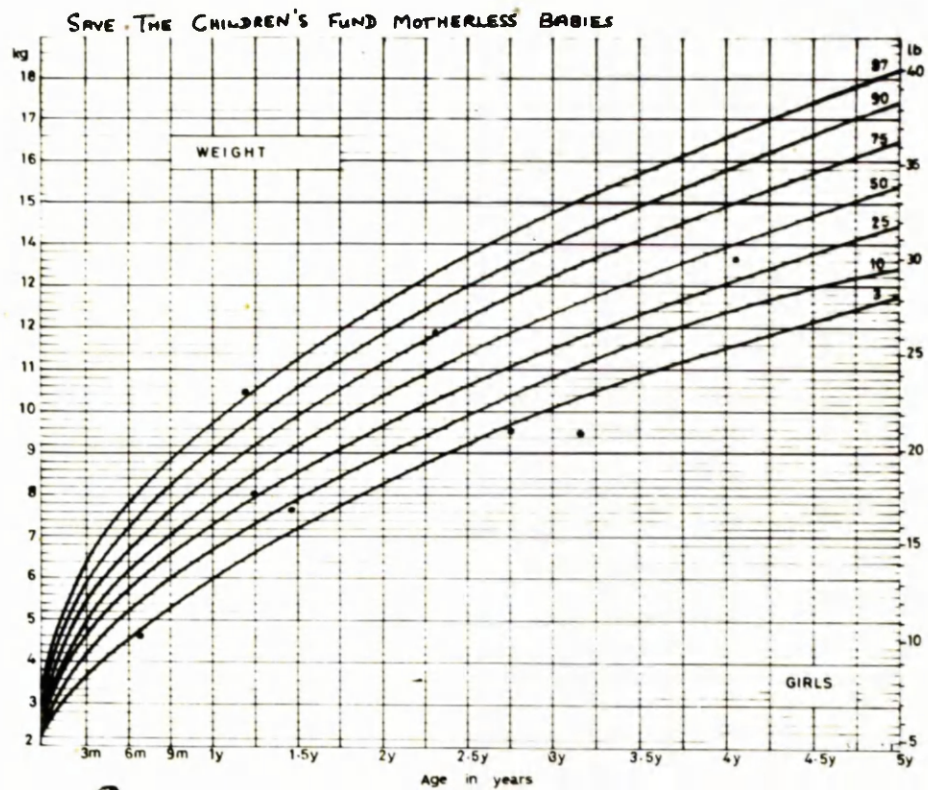
N = 12

FIG. 35



N = 8

FIG. 36

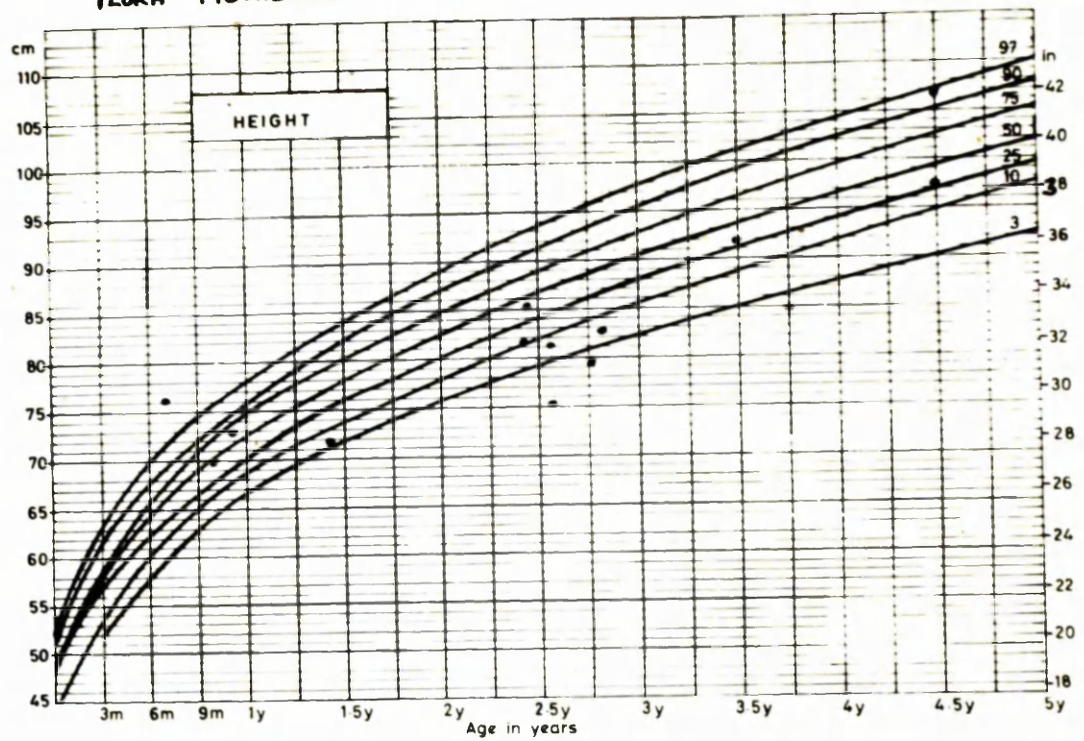


N = 8

FIG. 37

LORA MOTHERLESS BABIES

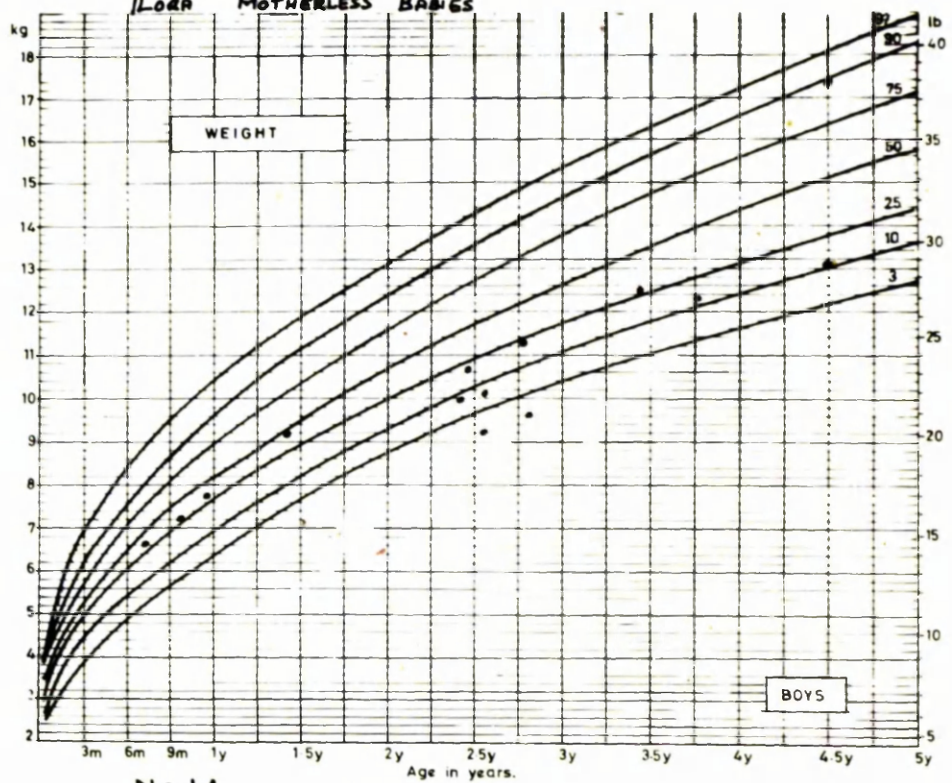
0-5 YRS BOYS



N = 14

FIG. 38

LORA MOTHERLESS BABIES

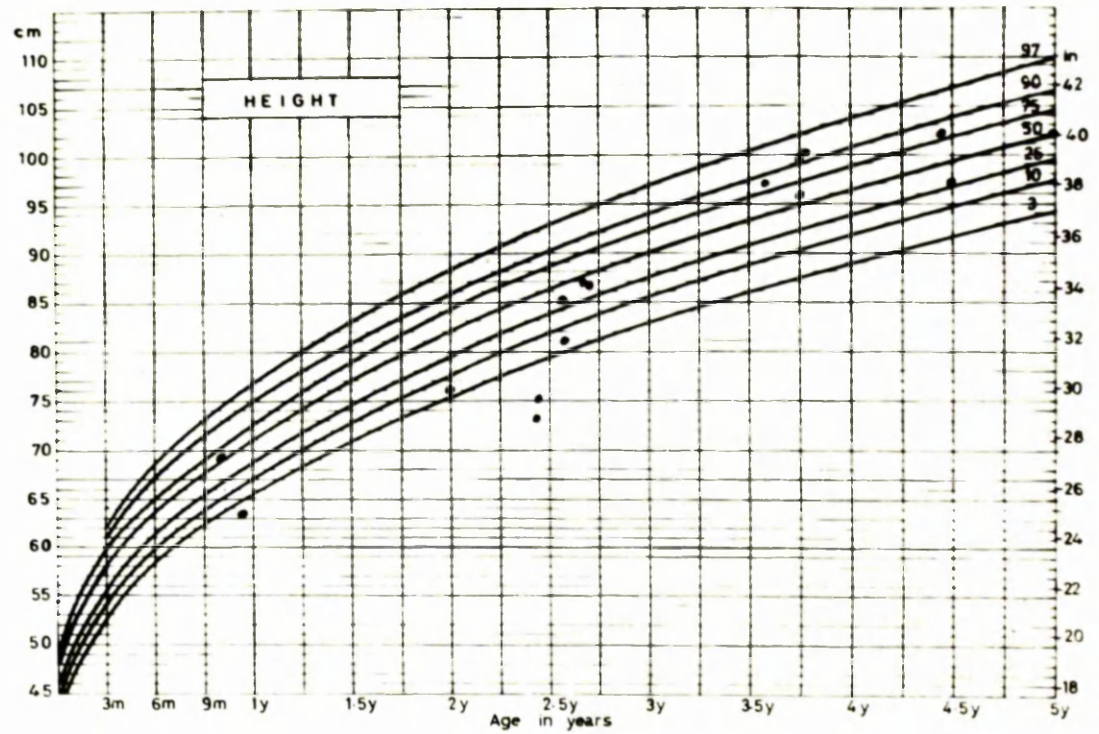


N = 14

FIG. 39

ILORA MOTHERLESS BABIES

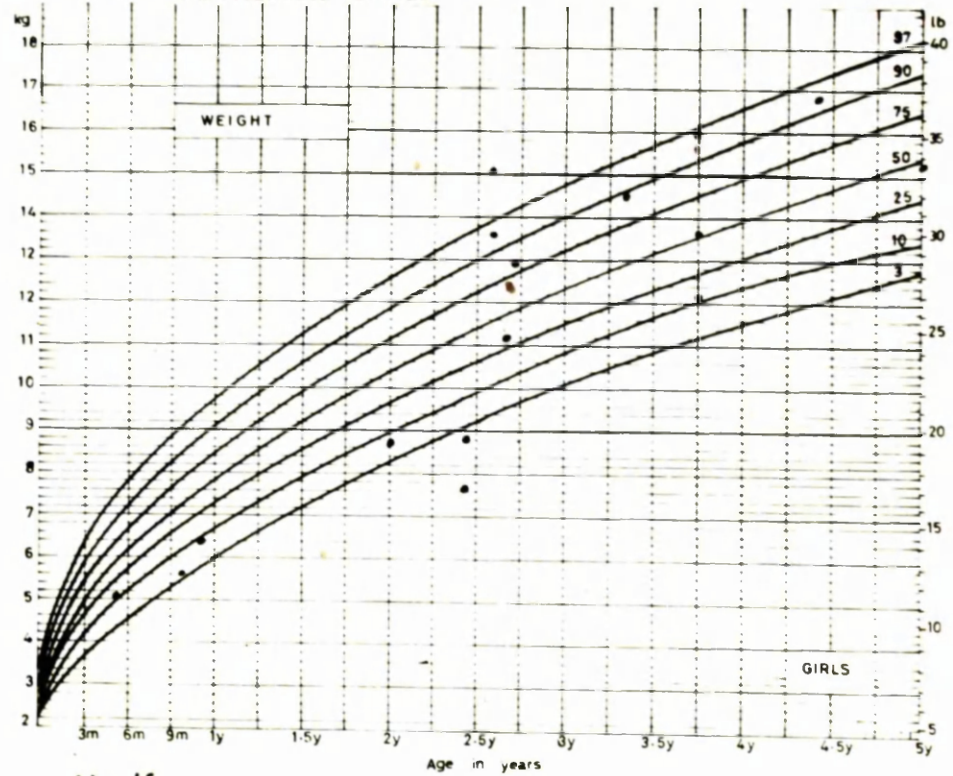
0 - 5 YRS GIRLS



N = 16

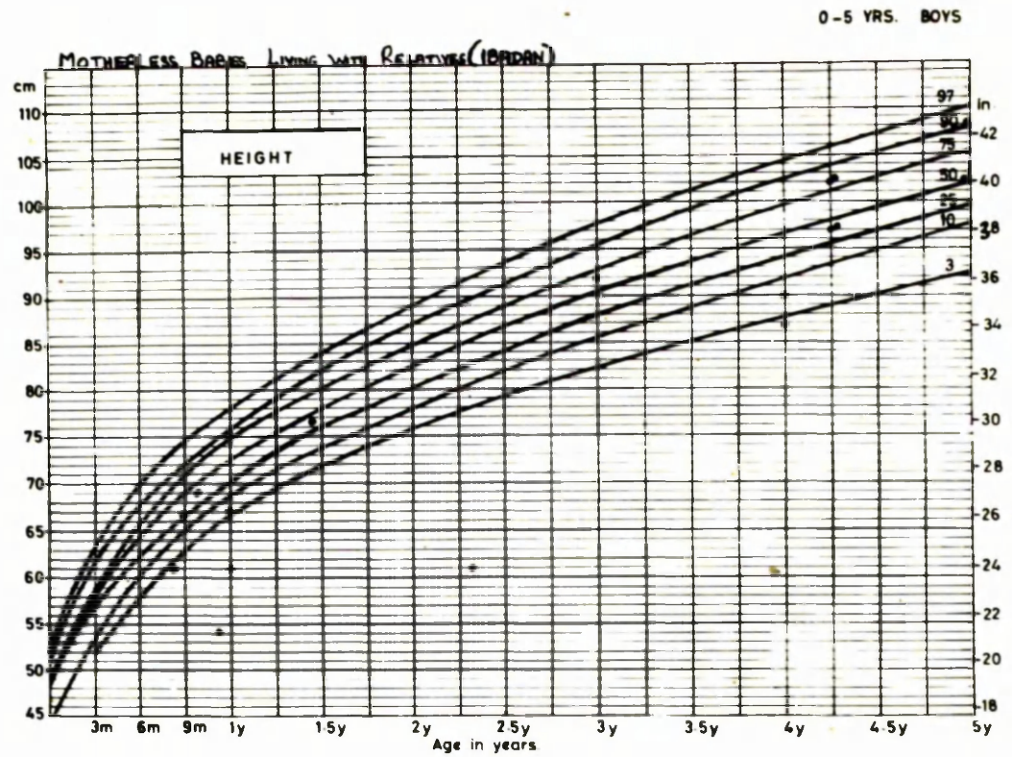
FIG. 40

ILORA MOTHERLESS BABIES



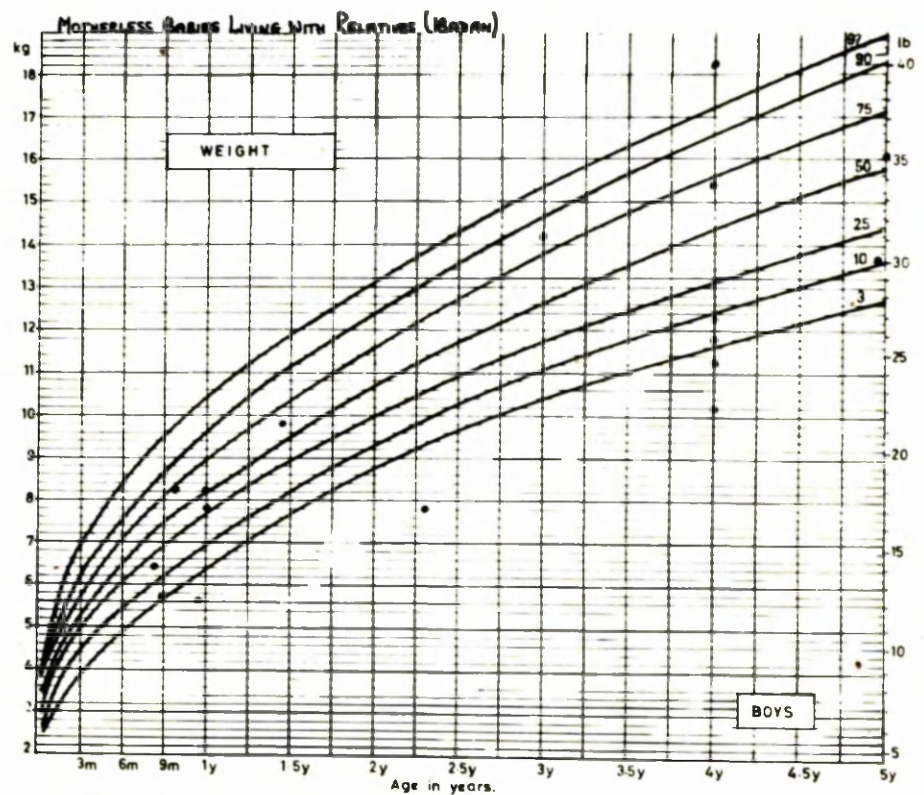
N = 16

FIG. 41



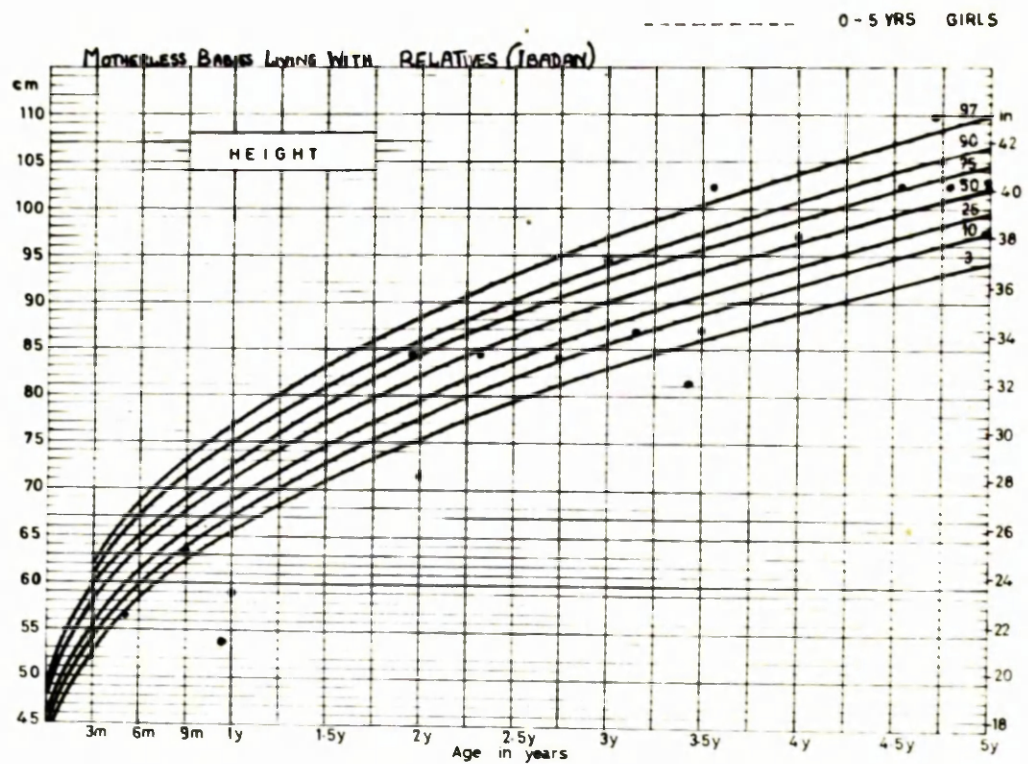
N-17

FIG. 42



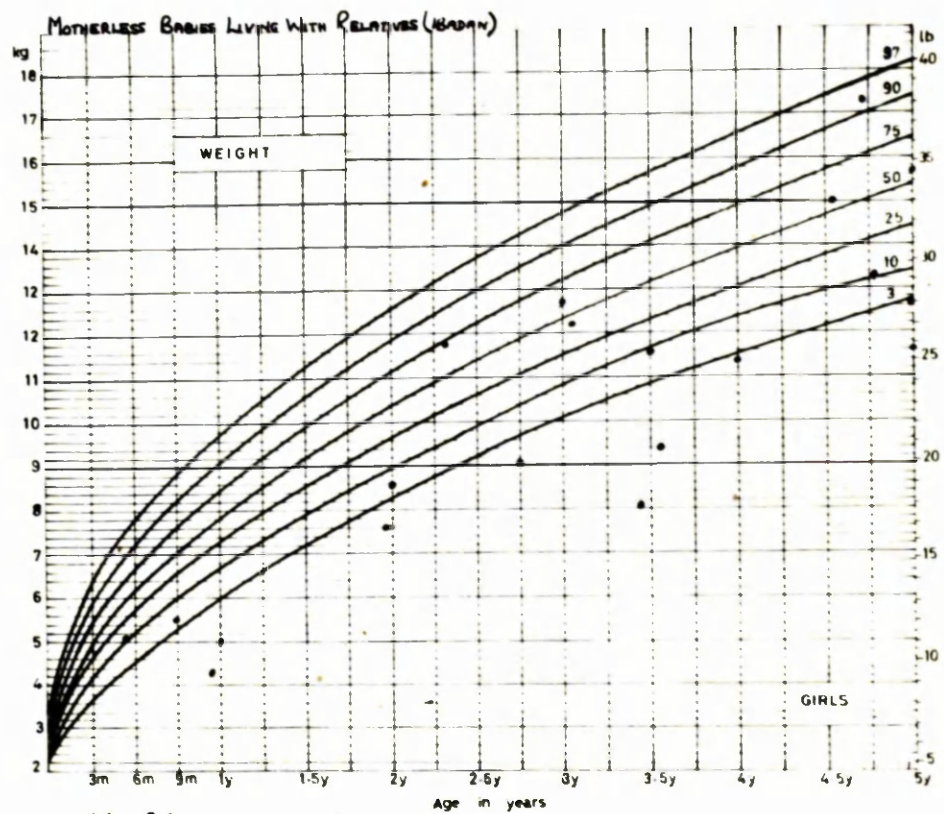
N-17

FIG. 43



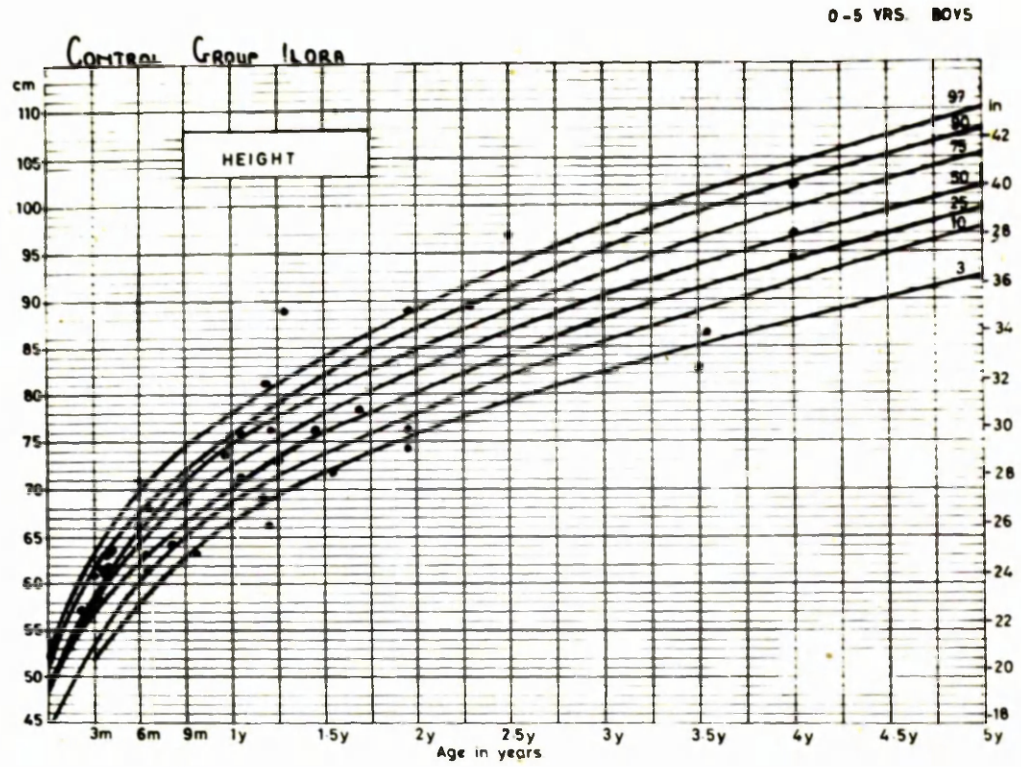
7-20

FIG. 44



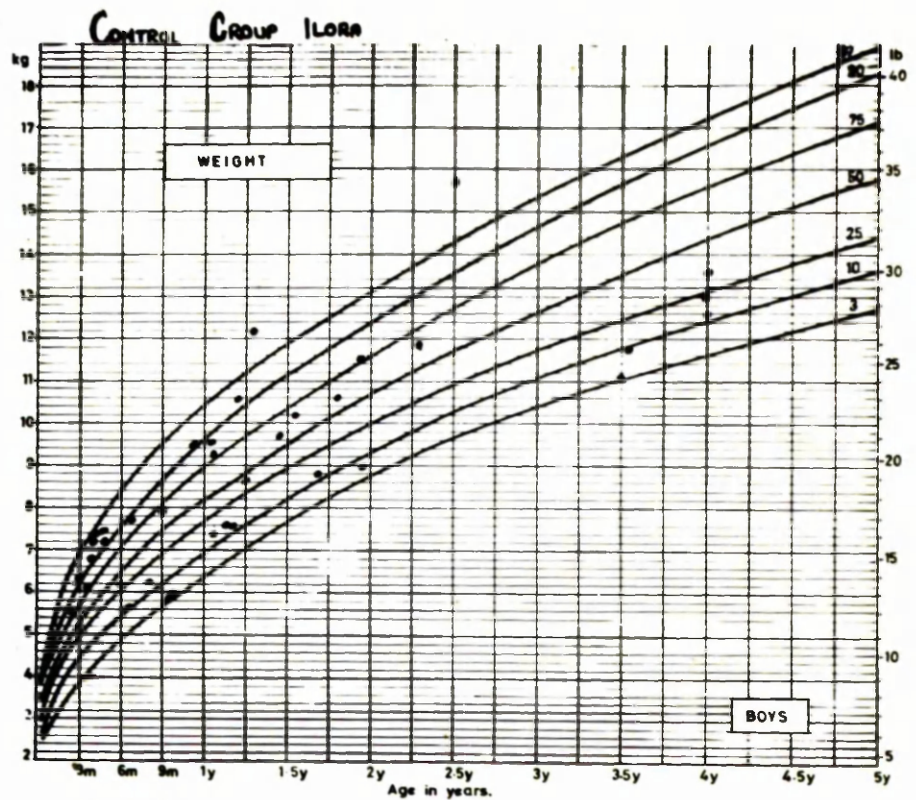
7-20

FIG. 45



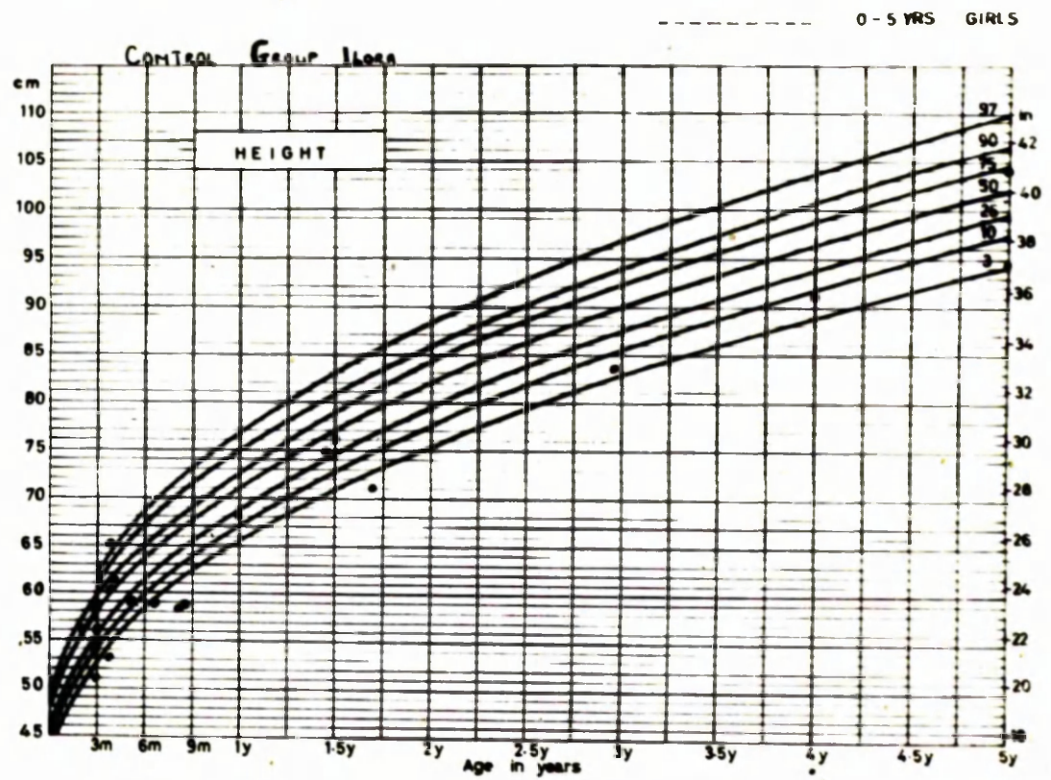
N = 38

FIG. 46



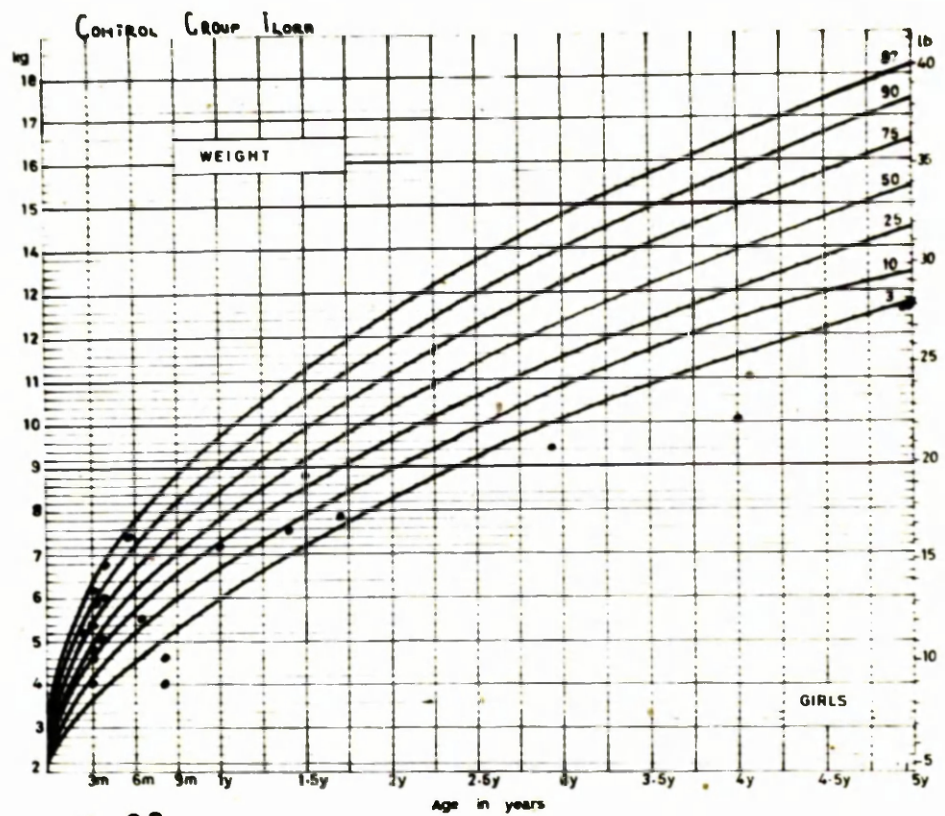
N = 38

FIG. 47



N. 22

FIG. 48



N. 22

FIG. 49

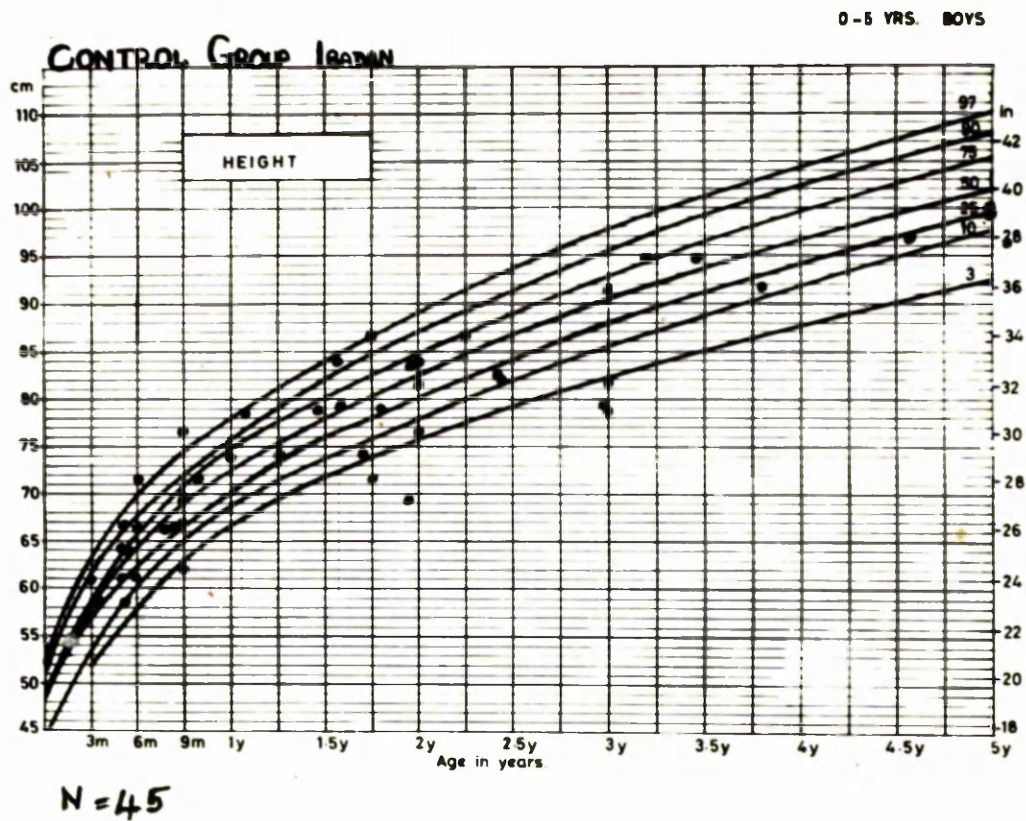


FIG. 50

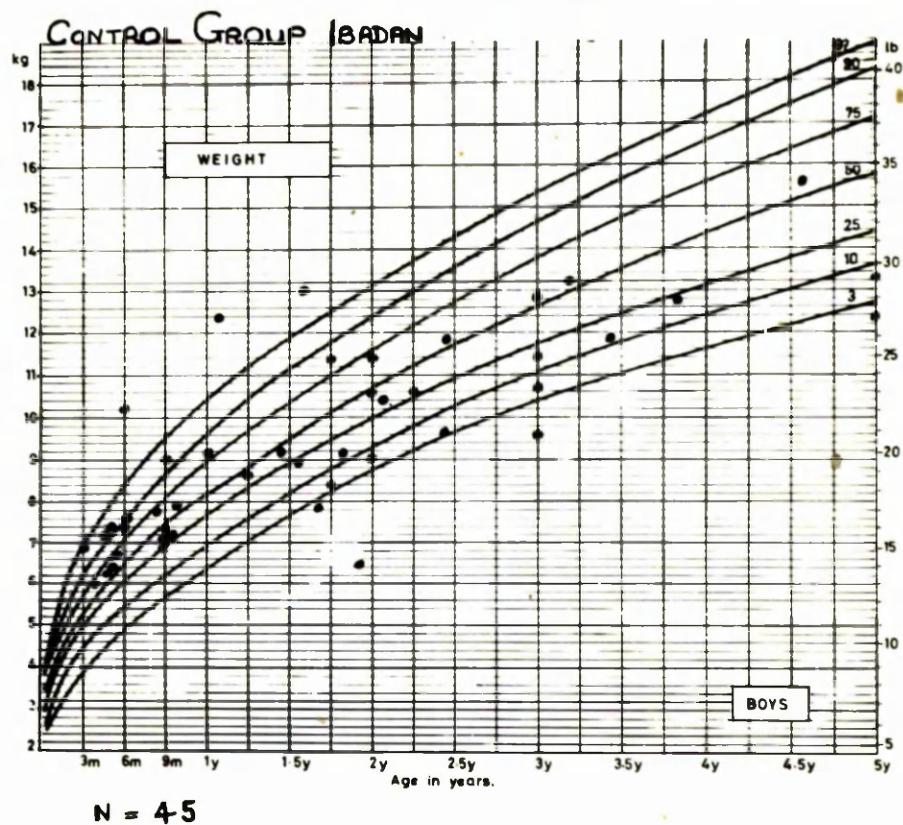
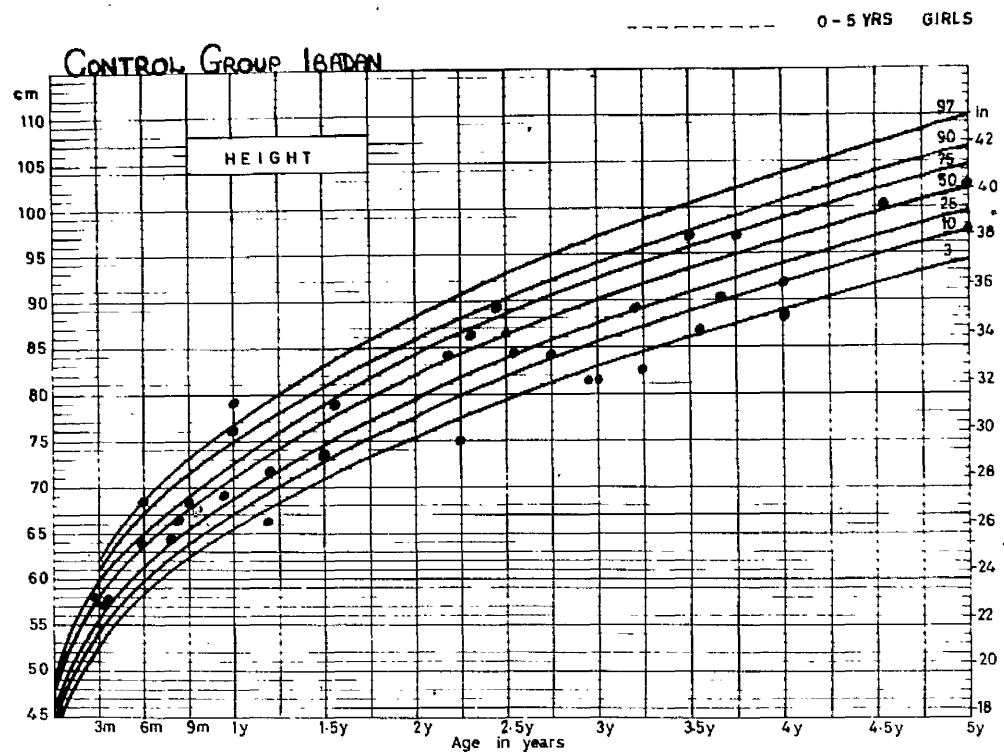
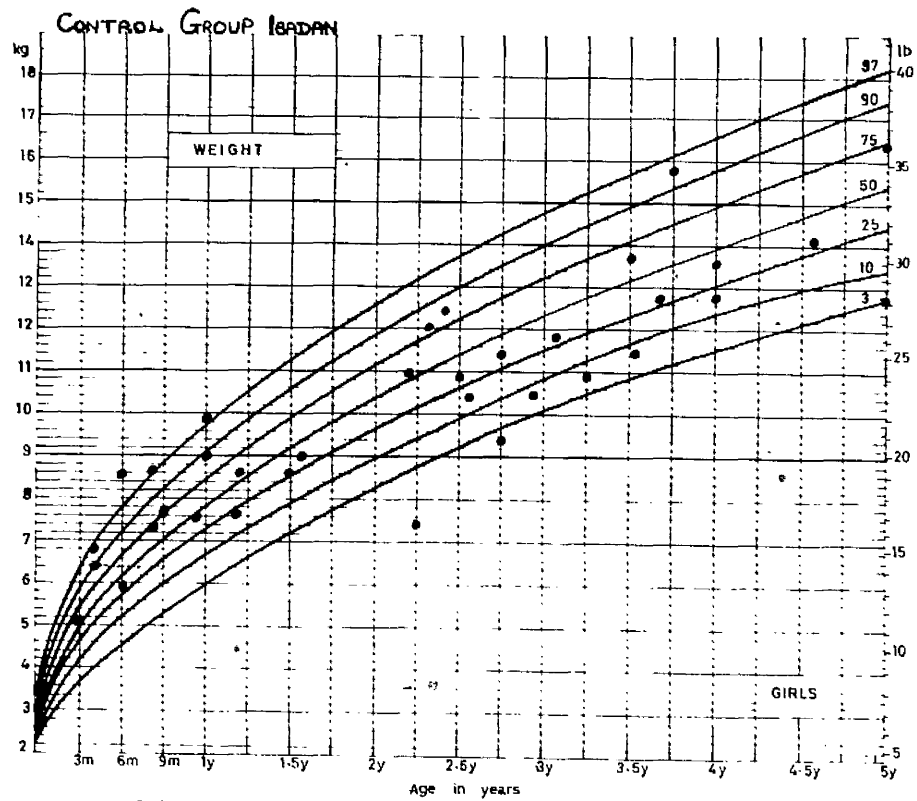


FIG. 51



N = 35

FIG. 52



N = 35